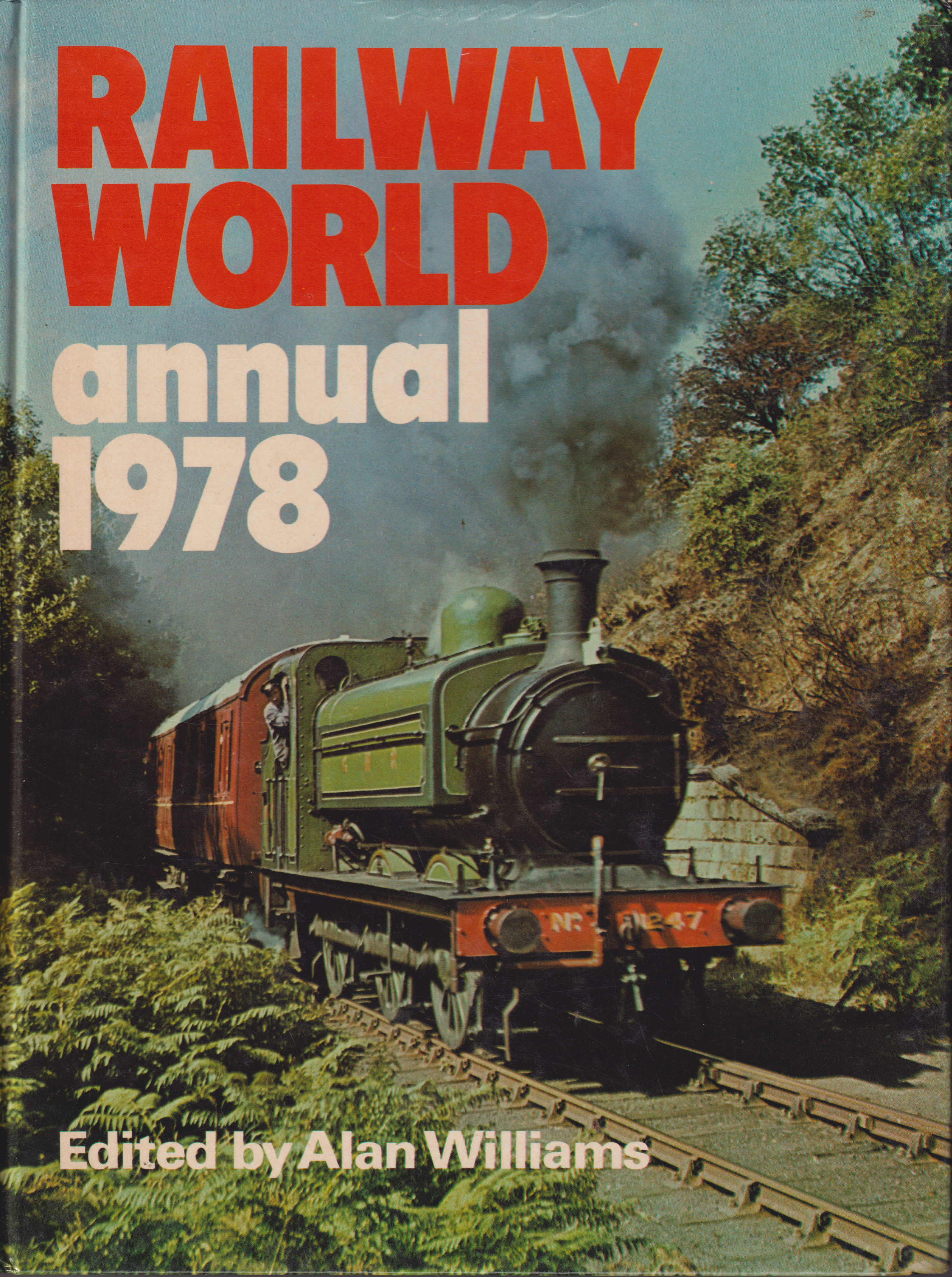
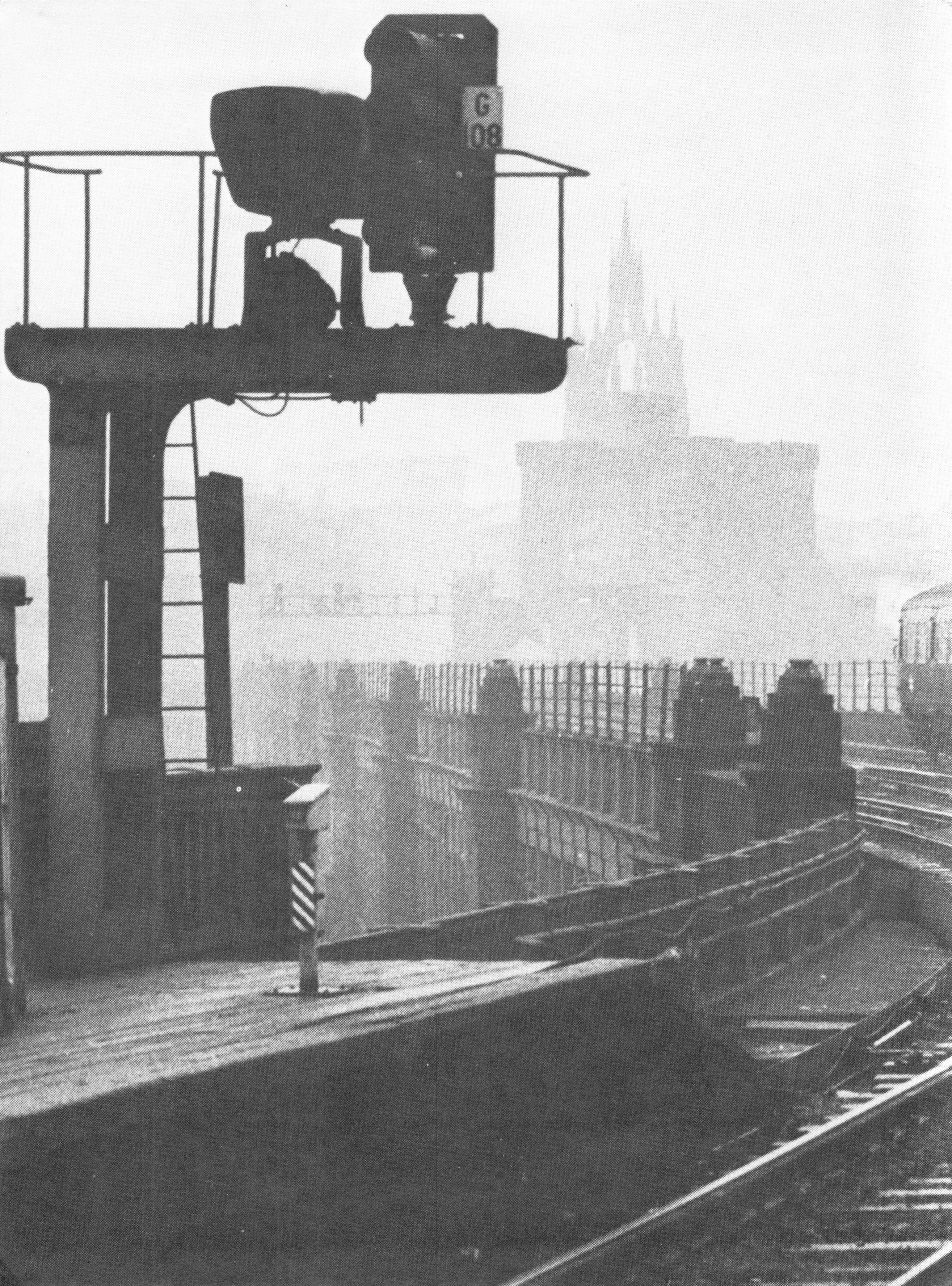
RAILWAY WORLD
annual 1978



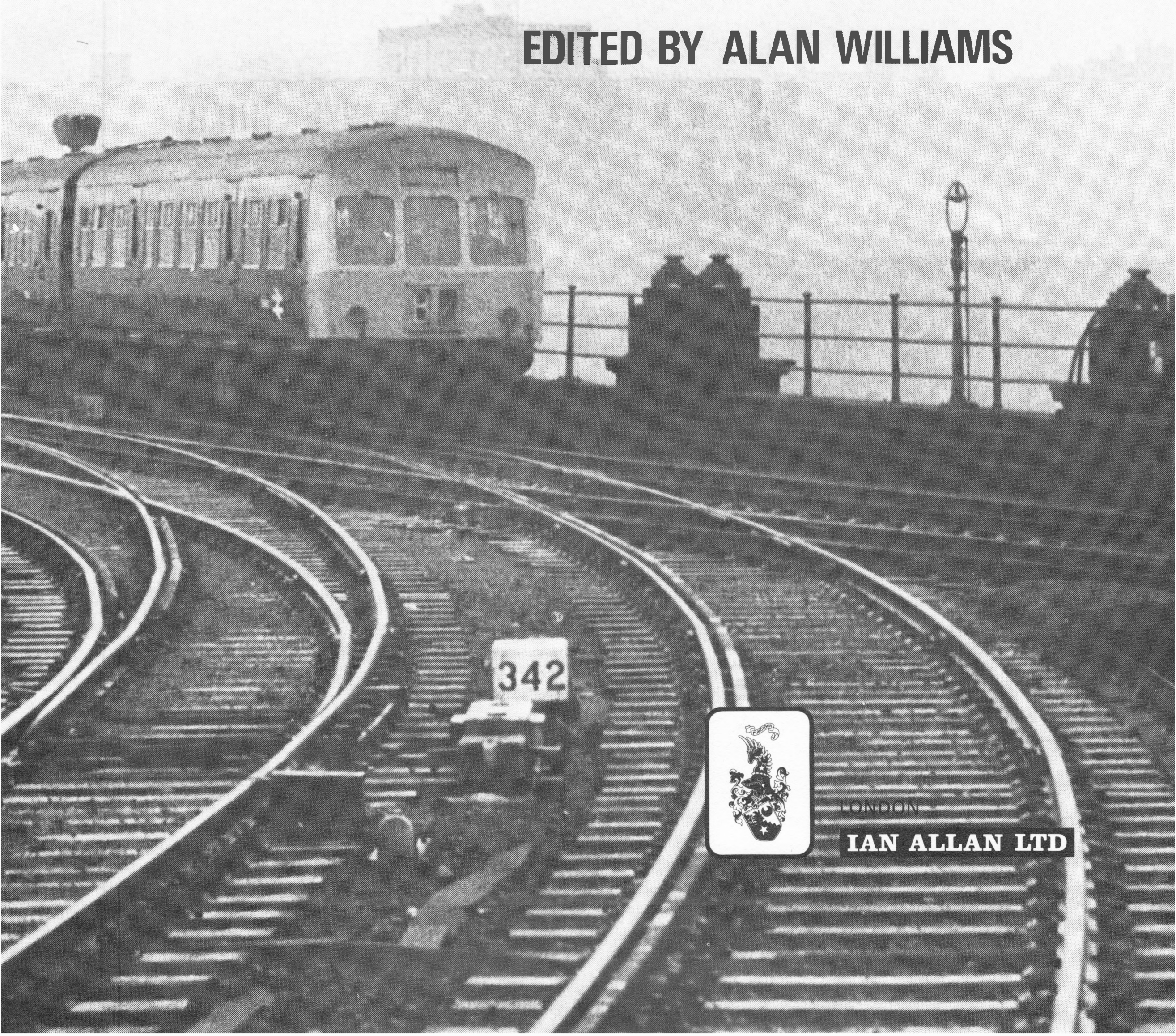
Edited by Alan Williams

£2.75


G
108

RAILWAY WORLD
annual 1978

EDITED BY ALAN WILLIAMS



LONDON
IAN ALLAN LTD

Contents

First published 1977

ISBN 0 7110 0813 2

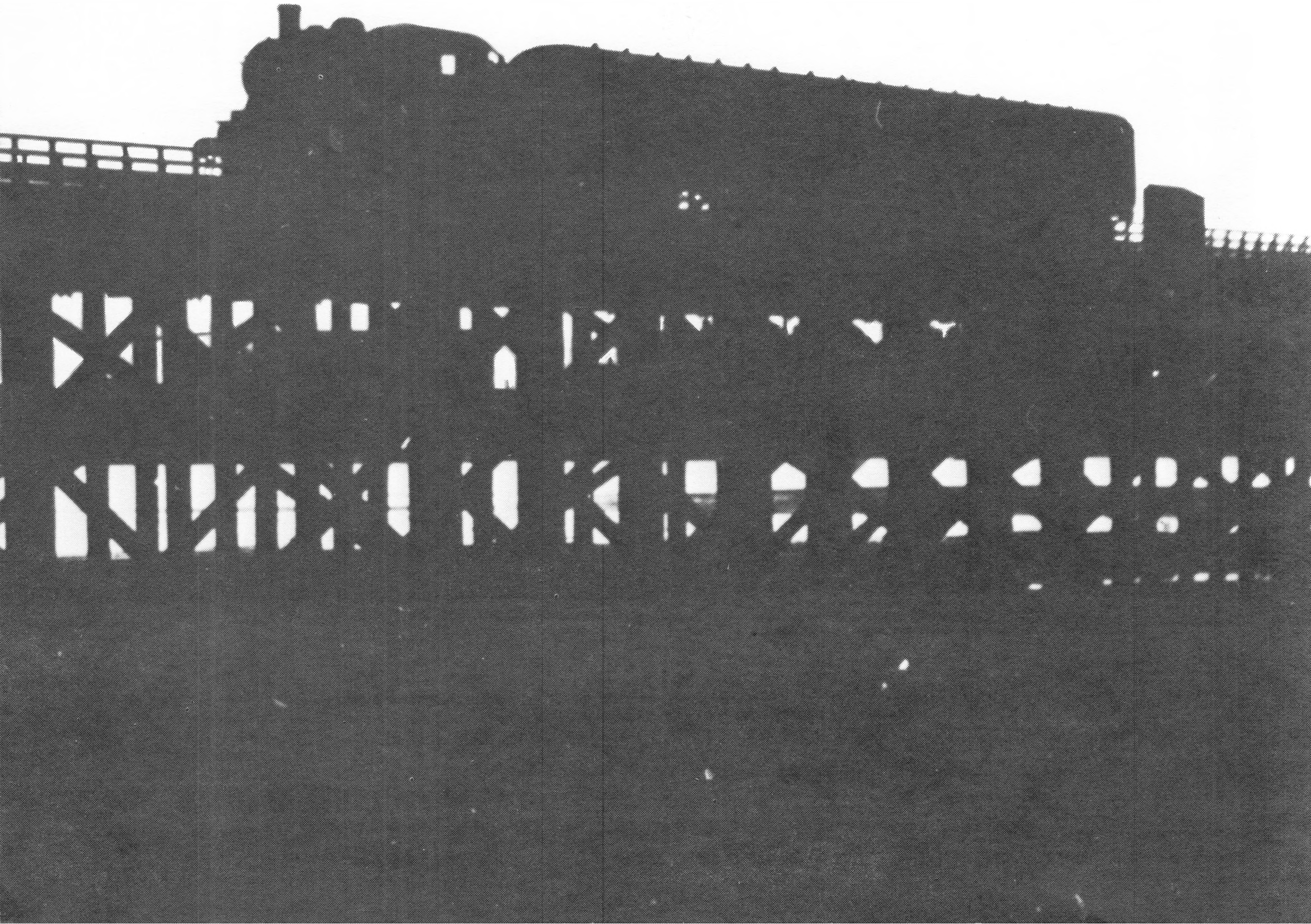
All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without permission from the Publisher in writing.

© Ian Allan, 1977

Published by Ian Allan Ltd, Shepperton, Surrey,
and printed in the United Kingdom by
Ian Allan Printing Ltd.

3 Is Your Journey Really Necessary? *Christopher Portway*
8 Still in Steam *Photo feature*
20 Officers Specials *Michael R. Bonavia*
26 Geordie Junction *Photo feature*
32 The Diesel Unit Disaster *H. A. Williams*
42 So You Want to Photograph Steam . . . ? *David Eatwell*
48 Another Highland Fling *Photo feature*
56 Safety Thirst *Geoffrey Kichenside*
68 Parcels Parade *Photo feature*
74 Along the Dotted Line *Victor Thompson*
78 Always New — 4001/2 *Photo feature*
82 Pullmans in Britain *Chris Heaps*
90 From Copper Caps to Copper Wires *D. W. Winkworth*
100 German Steam Scene *Photo feature*
108 Shrewsbury Remembered *D. B. Lewis*
116 A Cautionary Tale *Sydney Martin*
118 China for Steam *J. B. Hollingsworth*
122 Up the Junction *Photo feature*

Dusk at Barmouth on August 3 1964 finds an Ivatt Class 2 2-6-0 silhouetted against the evening sky as it rolls the 21.10 to Dolgellau out over the estuary towards Morfa Mawddach.
/M. Dunnett



Is Your Journey Really Necessary ?

Christopher Portway

Trains. A six-letter word which, to the long suffering public, often has four-letter word connotations! But there's another side to rail travel that shines brighter.

Secretary of a railway preservation society as I am, I'm not an engine nut. To me a 4-8-4 could be a calibre of bullet. No, it's not how it goes but the way it goes that makes a train traveller out of me. But let me explain how it all began.

It was a war that brought my fascination of long-distance railway journeying into the open. Failing to run fast enough in 1944 in Normandy I was able, as a captive passenger, to experience travel on a railway disintegrating about one's ears. 'That's happening to us now' you captive clients of British Rail may complain, but the 1944 disintegration was quite literal. However, it was escaping by train that really got me sold on railways of the world.

Mid-Silesia, now western Poland, was the point to which I was incarcerated to work as a slave coalminer. It was all of 1,000 chequered miles from home, and yet to move around the Greater German Empire in those days required a dossier of papers, a command of the lingo and a very definite purpose in life. So, having absented myself from my coalmine, and with the Red Army (and some very nasty rumours concerning their liberating procedures) approaching from the east, I set off westward. Hoofing it in my state of health was out, so the railway, again, became my vehicle. Freight train travel seemed to offer the lesser of two evils, so I looked around for a line that not only appeared to go in the right direction but could raise a gradient and a curve sharp enough to reduce a locomotive's pace and foil vigilance — I didn't want the occupants at each end of the train to know what was going on in the middle!

I eventually found what I was looking for and spent nine hours in long wet grass waiting for the appropriate train. But have you ever tried clambering into a high-sided wagon moving at 10mph? It looks simple enough on the films, with the hero nipping smartly over the side to an orchestral accompaniment. Unfortunately, the Berlin Philharmonic were on the Russian Front at the time and so weren't available for my epic, and I am afraid I made heavy weather of all those nasty gadgets and signal wires and things, especially designed to trip the unwary. Eventually, I made it and skulked in an empty coal truck which, following a prolonged halt in a railway yard, moved smartly off again — in the wrong direction, ending me up some 50 miles deeper into the Reich than I was when I started!

Drained of all confidence in freight travel, I decided, with amazing daring, looking back, to try my luck on the passenger service. At least on a passenger train there was some hope of going where you actually wanted to get to. I located a suitable, (i.e. quiet and rural) station, and, because I found the word "erste" easier to pronounce than "dritte", bought myself a first class ticket to Cracow. My linguistic deficiency was a blessing in disguise for, with British Prisoners of War not exactly encouraged to travel around the Reich first class, I was lucky not to be bothered by nosey officials all that much. Twice the ticket inspector came to verify my ticket, but on the third occasion he was pacified by the sight of me in animated discussion with two German naval officers.

They had come aboard too quickly for me to move out and though I feigned sleep I felt their eyes roving over my battledress trousers, size 10 army boots and the civilian jacket I had "borrowed". My eyes opened for a fraction of a second and met theirs. Eager to talk they were in like a flash. Europe at that period was a maelstrom of uprooted foreigners, and whereas the stock compartment conversation opening in Britain is "How late are we today?" the Teutonic equivalent was "What nationality are you?" Ready for that one, I replied "Ungarisch" — praying that neither spoke Hungarian!

My companions were a delightful couple who insisted on pressing a bunch of grapes on me (I'd been living on raw potatoes for a week) and asking about my hometown. At that time I had never been to Budapest but they seemed satisfied with my description of Bristol.

Being 'on the run' in totalitarian states teaches you a few things. One of the things not to do is to appear inside a main railway station — they were always crawling with the Gestapo and police and were therefore to be avoided like the plague. Instead, I dropped off into the night-enshrouded city short of the station.

But my luck had run out — I'd forgotten the curfew! The Wehrmacht patrol who arrested me were quite nice about everything and we each consumed a lot of new bread outside the baker's shop they'd caught me trying to rob. Unhappily, the Gestapo, to whom they were ordered to hand me over, took a more jaundiced view, and thus my wartime rail travels came to an abrupt end. Without a convenient war I can't, in all honesty, recommend you have a go. But there is scope in eastern Europe, even with the cold war in its current state of thaw; perhaps I'd better tell you how I got engaged to be married on the Orient Express!

Whilst 'on the run' in Czechoslovakia (another wartime episode in my life, but a trainless one) I had met a girl. By the time the spark of romance had lit the boiler where my heart is supposed to be and it had become imperative to return there, that country had a Communist instead of a Nazi regime to deal with. Like its predecessors, it had no romantic notions and refused me entry. So I declared my own personal war and bent my footsteps eastwards following — but not too closely — the Nuremburg-Cheb-Prague railway line. Even in 1950 the Iron Curtain was a daunting affair of barbed wire, minefields, watchtowers, patrols and similar discouraging impediments. Much to my surprise — and the new regime's, for their minions were facing the wrong way, trying to prevent people getting *out* — I got through, but came a cropper on a bridge near Cheb. This landed me in jail for a month or two, which at least gave me time to think.

Returned to West Germany, I caught the Prague section of the Orient Express, dodged the well-meaning German authorities and arrived once more, but this time openly as a passenger, at the Czech border. Nobody was interested in me, because they were far too busy looking for capitalist spies *beneath* the coach. At Cheb station I almost got away with it, for the immigration and customs people had grown lazy through lack of business and I was left to my own devices. There was my girl on platform four and, together, we made for the exit. I was brought to heel, of course, but there were a few brief minutes for a chat and exchange of sweet nothings. With a further official flea in my ear I was expelled westwards, but I repeated the process the following Easter with similar results. In our further seven stolen minutes we became engaged to be married and exchanged rings. That girl on platform 4 is now my wife; I suppose I could have asked her to marry me by letter, but it's not the same, is it?

I dare say there's still scope for variations on this theme if you're in the mind for it and there are certainly plenty of attractive girls left in Prague! Alternatively, set your mind on a faraway city and catch a train there; I don't mean Sheffield or Glasgow or anywhere like that but, say, Vladivostok. It's a forbidden city, like most Soviet towns, which adds a pinch of spice.

I made Vladivostok a few years ago via the Trans-Siberian Express and a magnificent ride this turned out to be. (Described in Railway World Annual 1973) Of course, 12 days on metal wheels isn't everybody's cup of tea, but you can visit three cities en route. My advice is to stay on the train, for Novosibirsk, Irkutsk and Khabarovsk are, in themselves, a dead loss. Omsk sounded an intriguing place to see but a little man with a badge ever-so-helpfully led me straight back to the railway. The confinement of a train is the one place in Russia you can talk to her citizens — especially in the restaurant car where after a few beers and vodka chasers, people find themselves off the leash.

Invitations start coming in about the third day out. One of mine was from a Red Army colonel, an old soldier with a chestful of medals. "Come", he had said to me during a station constitutional — five days and more on a train and you take what walks you can get with a certain desperation — "We will partake of a Red Army breakfast". I was green enough to conjure a vision of bacon and eggs, but instead World War 2 battles in which we'd participated formed the subject for the toasts — and I don't mean the sort usually associated with breakfast. My colonel had been at Stalingrad, Kursk, The Crimea, Smolensk, the lot, and my few Normandy epics looked like Red Indian skirmishes against his holocausts but the honour of Britain was at stake. I changed gear to other people's battles, and was dazedly wondering whether it was possible to be in Crete and Singapore at the same time when I fell asleep.

Another companion was Peter, a student from Komsomolsk. Full of socialist ardour and my duty-free cigarettes, he was persuaded to buy me a ticket to Vladivostok, for security reasons emphatically off the tourist track. The experience was hardly inspiring but it was the end of the line. Unfortunately, the ticket was only a single and I was left with the problem of getting back. Directed to an office in the town full of posters of places quite unattainable to Russians, I finally managed it with the help of my Barclaycard!

Should you, however shrink from the prospect of the longest railway in the world, you might like to try the shortest. Albania has a nice line in toy trains and is the only country I know where one has to apply to the government for a railway ticket. I didn't get one even then, but I still managed to commute between Tirana, Durazzo and Elbasan. And that's all there is of it, which is perhaps just as well since any foreigner without slit eyes and a yellow complexion is classed as an enemy of the people and is inclined to be treated accordingly! The language can be a little confusing, too; a nod means 'no', which left me standing on Tirana station watching my Durazzo train steaming out!

Someone once bet me I couldn't circuit the

Mediterranean by train, railwayless sections notwithstanding, which was a silly thing to say to me really. I managed it inside a month, including the classical situation of being denied entry into Egypt but being forbidden to return to Libya. I'd still be stuck out in the Western Desert today if the Egyptian police hadn't tired of me making such enthusiastic inroads into their meagre rations. In Jordan, letting slip I knew Princess Muna gave me the virtual freedom of the Hedjaz Jordan Railway. All I wanted was permission to take a few photographs, but instead they gave me a whole train to play with!

India is another challenge to the railway traveller. There are gaps, but they're narrowing; coming down the Khyber Pass sharing the buffers of the 1923 British steam locomotive with a couple of Pakistanis was my nearest approach to heaven, but sharing a third class compartment of the Flying Mail to Delhi with 38 others wasn't! In Cuba I wasn't allowed anywhere *near* a train.

There are still a few railway journey treats about the world and I am gradually working through them. Some are a disappointment. "A very few sights are better than the rumour of their beauty" wrote novelist Pearl Buck, a profound statement which, suitably adapted, could apply to a number of famous trains and railway lines. The recently-discontinued Orient Express is one that leaps to mind — deadly slow except in France, a commuter train in Switzerland and Italy, and not a sniff of espionage or skulduggery in the Balkans. Five times I've made this journey and nothing in the least exciting has happened. But carry on to Baghdad and you can have great fun with the Taurus Express, especially in Turkey where, with the cooperation of the engine driver, you can walk and pick flowers beside the tracks as the train puffs slowly up the killing gradients.

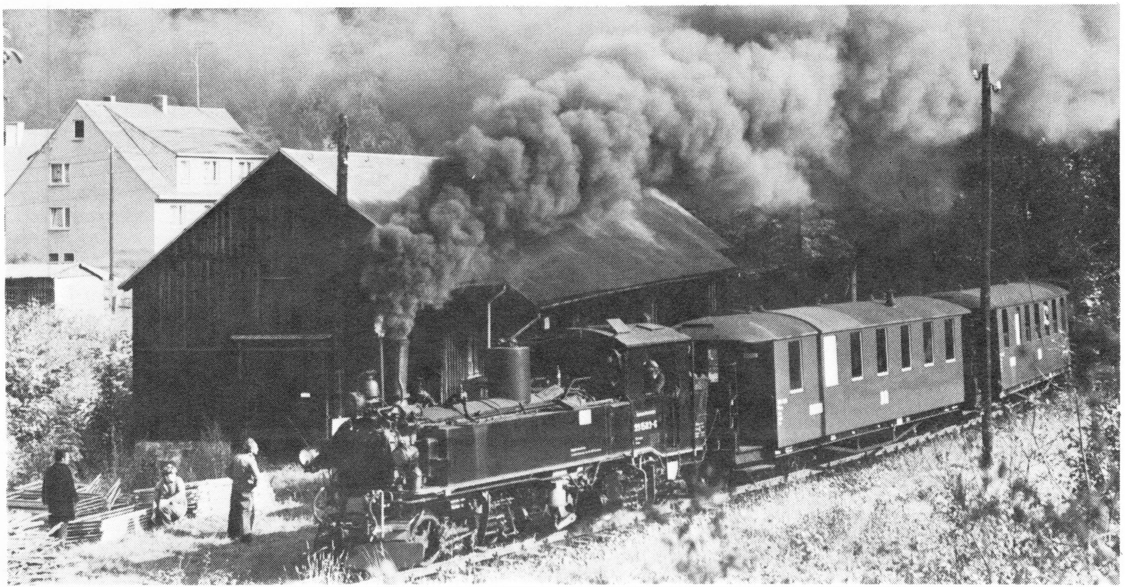
I came through the Rockies from Vancouver to Montreal in the cab of a characterless Canadian Pacific Railway diesel not so long ago, a three-day ride that is spectacular in the mountains but deadly dull over the plains. And some of Amtrak's trans-American offerings on trains with names like Abraham Lincoln, Knickerbocker, Yankee Clipper and Broadway Limited centre more on what happens *in* the train than outside it. With cocktail bars, cinemas, bingo girls, double-decker observation saloons and reading rooms, it's all too easy to forget that you're on a train at all — which, alas, seems to be the general idea.

My latest accomplishment has been the covering of most of the network of the East African Railway — an enthusiast's 'must' — which, sadly, is going the way of the Orient Express: what is left, however, gives you a ride through a wild, animal-infested wilderness that you will never forget.

I had to go to Kenya for the purpose of taking part in an expedition down the remote Tana River, but that's another story. However, we had ten days of preparation in Nairobi before it started, which was just time enough for me to add the new train journey to my collection.

It was to the beat of 20th Century war drums that we had come to Africa and nowhere were they thumping louder than on the Kenyan-Ugandan border where President Idi Amin's army was poised to hurl itself at Kenya. A few days earlier the Israeli triumph at Entebbe had stirred the president to a crescendo of hate against Israel, Britain, Kenya and indeed any country that failed to support his monstrous edicts. To make matters worse, the East African Railway was in the process of being truncated; already the line to Tanzania had been cut and within a fortnight the same fate was to befall the link with Uganda. So I was working against time as I happily rattled to Mombasa and back then, eastwards, to Nakuru, Kisumu, Lake

East German narrow gauge: DR Saxon Meyer 0-4-4-0T No 99.1583 storms round the tight curves out of Wolkenstein with a morning train to Johstadt on September 27 1976./David Eatwell



Victoria and round the lake to Uganda. With me on the train was a young Ugandan law student; he was studying at Nairobi University but returning home to his parents for a vacation. As so often happens on a long train journey, we shared our resources and companionship. It was a friendship I was later to regret.

All went well until we arrived at Kampala some four hours late, due entirely to the bloody-mindedness of officialdom on the hostile border. My young companion accompanied me up the stairs towards the ticket control where an officious-looking civilian stood behind a desk close to the barrier eying the jostling crowd with quite unwarranted distaste. His gaze fell on me. "You. Here," he barked.

Together we reluctantly complied and he studied our passports. Without another word he took us through the barrier, elbowing the jostling, jovial crowd out of the way. People looked at him and all the laughter went from their faces. In a pokey little office we were questioned about our movements. Why had we come? What were we doing? When did we meet?

I noticed the emphasis on the "we" and made it abundantly clear that the student and I had simply become acquainted on the train but, if I was believed, no sign was given.

Another man joined us. He spoke to his colleague in rapid Swahili and we were taken out of the station to a parked car. Rain was falling in torrents. The two of us were pushed into the back seat with the second man while the first got in beside the driver. I started to protest that my Nairobi-bound train was due to leave within four hours, but nobody took any notice. Raindrops danced on the tarmac and it occurred to me that, in the short time at my disposal, the best way of seeing Kampala was by car!

Never have I seen emptier shops or a more depressing town. Even Eastern Europe in the Stalin era could make something out of nothing as far as window-dressing was concerned. The car started to cough as if starved of petrol and the driver moaned about lack of fuel coupons, even for official vehicles. The engine finally died on us as we reached a squarefaced concrete building.

Kampala Police Headquarters is a grim establishment. A stench of sweat and rancid tobacco permeated the bare-walled corridors and frightened detainees, handcuffed and wild-eyed, passed us by in the charge of uniformed policemen. I noticed that my companion's face had turned deathly white and I guessed he knew more about Ugandan Security Police methods than I did.

In a bare box of an office the interrogation began. Our new inquisitor was stern but not unpleasant. The contents of my wallet and of my small overnight bag were laid bare. Abruptly I became aware just how easily small inconsistencies can be blown up into a source of deep suspicion.

"If we were only acquaintances why had we exchanged addresses? The man produced scraps of paper on which we had indeed given each other our respective addresses. Why did my passport show me as a company director and my press card indicate that I was a journalist? Why had I come to Uganda just for a few hours instead of days?

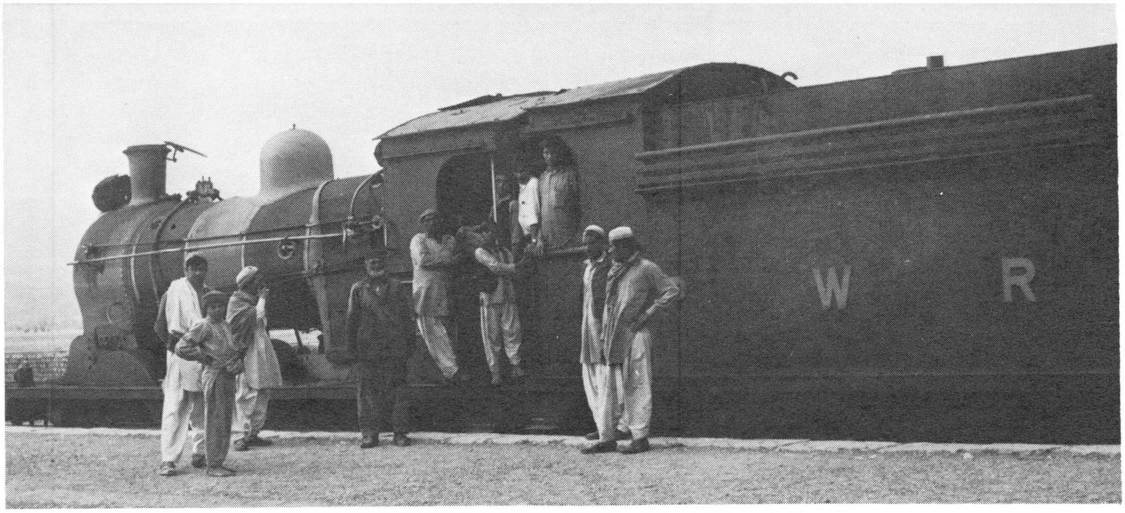
But how can you make an African understand that many Britons and not a few other nationalities are fervent railway enthusiasts — though perhaps not so many belong to my brand. How could one explain that I preferred to retain my previous description in preference to the sometimes provocative "journalist"? So I emphasized my part-time occupation as travel writer, offered some of my defunct family business and kept the whole thing as simple as possible.

I had at least learnt a thing or two about interrogation from my earlier wartime and postwar experiences in Europe. Having been subjected to intensive questioning in far more ugly circumstances in both Nazi and Communist prisons where, by offering nothing less than the truth, I had raised suspicion by delving too deeply into my past, I had come to realise that the key to success lies in keeping the answers simple and remembering them perfectly at the subsequent questionings which are sure to follow.

I was asked about my affiliations, interests, hobbies and education, and when this was all over, I had to repeat it all at dictation speed to another man in another office. Unfortunately, the form failed to fit my answers but I knew that trick and stuck fast to them. And, like me, the chap couldn't spell, so I ended up by writing out most of the answers myself. Back in the original office everything was checked by a rehash of the whole questioning procedure, but it seemed to satisfy them, for they said I could go.

Pushing my luck, I demanded a car to return me to the station and, much to my surprise, got it. I never saw my erstwhile companion again but that look of fear I saw in his eyes remained with me. It was still raining and because my train had been so late in arriving it left an hour late so I caught it with only minutes to spare. It was crammed with humanity but I found myself a foothold on the outside edge of a second class coach.

I was already soaked to the skin when the train finally rolled out of Kampala's green suburbs. At the bottom of the gradient to Seta the English Electric diesel locomotive simply gave up the ghost; the wheels revolved wildly but the train remained obstinately motionless. Whether we were asked to do so I never discovered but, abruptly, everyone dropped off the train and the men put their shoulders to the coaches. In spite of the rain it all seemed a big joke. I got the



Above: *Staff and passengers pose alongside a very British-looking inside cylinder 0-6-0 on the PWR Khyber Pass Railway.*/Christopher Portway

impression it had all happened many times before and, such is the overloading of trains in East Africa I cannot say I am surprised. At the third attempt the wheels gripped and, like a flash I was into a second class seat.

It was a six-hour journey back to Toro where a posse of uniformed police headed by a sergeant with a machine carbine shoved their way along the corridor and hauled me out on to the station. An officer with a braided hat began the usual catalogue of questions but at least with an original slant. Why did I want to leave the country? I told him that his colleagues had already asked the same questions and covered similar ground, but he intimated that those in Kampala were not his colleagues. The questioning continued and my train departed.

With its departure, my interrogator seemed to lose interest. It was almost as if he intended me to miss my train. "You'll have to go back to Kampala," he announced. "The train leaves early in the morning."

I began to think. A piece of paper they had given me at the border stipulated a two-day stay. The next Nairobi-bound train was two days hence, so they could get me on a technicality. And that was, of course, always assuming there would be another Nairobi-bound train in the present crisis-ridden circumstances. On the other hand, with the border just six miles away, there could be other methods of leaving the country. Though the Ugandan army was supposed to be massed on the border, I presumed they would be looking the other way. It seemed unlikely, too, that the Amin regime had yet achieved the finesse of the East Germans, Czechs and Hungarians in their methods of discouraging illegal emigration. I resolved to take the chance if one were offered.

Most of my night was spent in a draughty waiting room, and one of my fellow dozers was a policeman with a rifle who I took to be my escort. He never made his duties quite clear, but followed me outside once when I went to relieve the forces of nature. Anyway, he partook of one doze too many and was curled up, snoring happily on a bench when I left with the dawn, a convenient forest swiftly swallowing me in its leafy maw.

I did not have to walk far. Quite by accident I stumbled across a Ugandan army communications unit attempting to get their radio transmitter to work. As an ex-soldier myself I felt an affinity with their predicament; the wretched things never do work when you want them to! I wish I could have helped them more, but electronics are not my strong point.

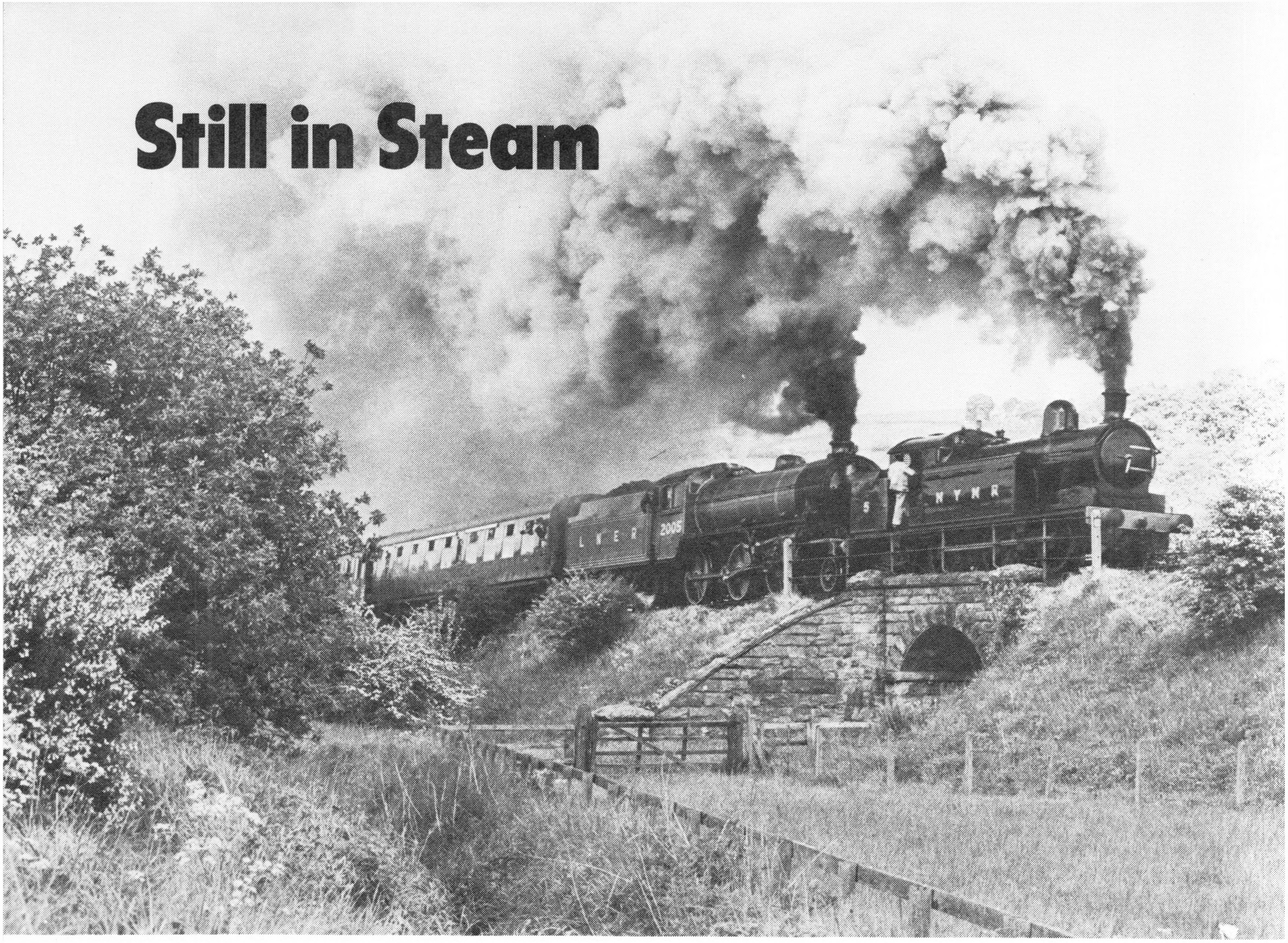
They offered me a lager in lieu of breakfast and, thus encouraged, I asked for a lift towards Malaba, the Kenyan border village. I gave them a bit of guff about missing my train — which was, after all, painfully true. One of the soldiers decided he had to go and ask permission of his officer and I began to wonder if I had done the right thing.

The officer came over. He spoke English with a strong taint of the Bronx and confirmed he had spent much of his early life in New York. It transpired that he was only too pleased for his driver to take me to the checkpoint down the road!

I hadn't realized how close the road had been and, by vehicle, Malaba was no distance at all. The driver wanted to take me right to the check point but of course this didn't fit my scheme of things at all, so I dropped off short of the border and struck across pleasant hilly country until I came to the railway again, which I then followed to the brook that marks the physical border — and got my feet wet.

In Malaba I obtained a lift to Eldoret and, believe it or not, managed to catch up with my yesterday's Nairobi train which had been held up at Malaba for most of the night as a reprisal. Heads you loose, tails I win. That's how it is with trains.

Still in Steam


LNER
2005
5
NYMR

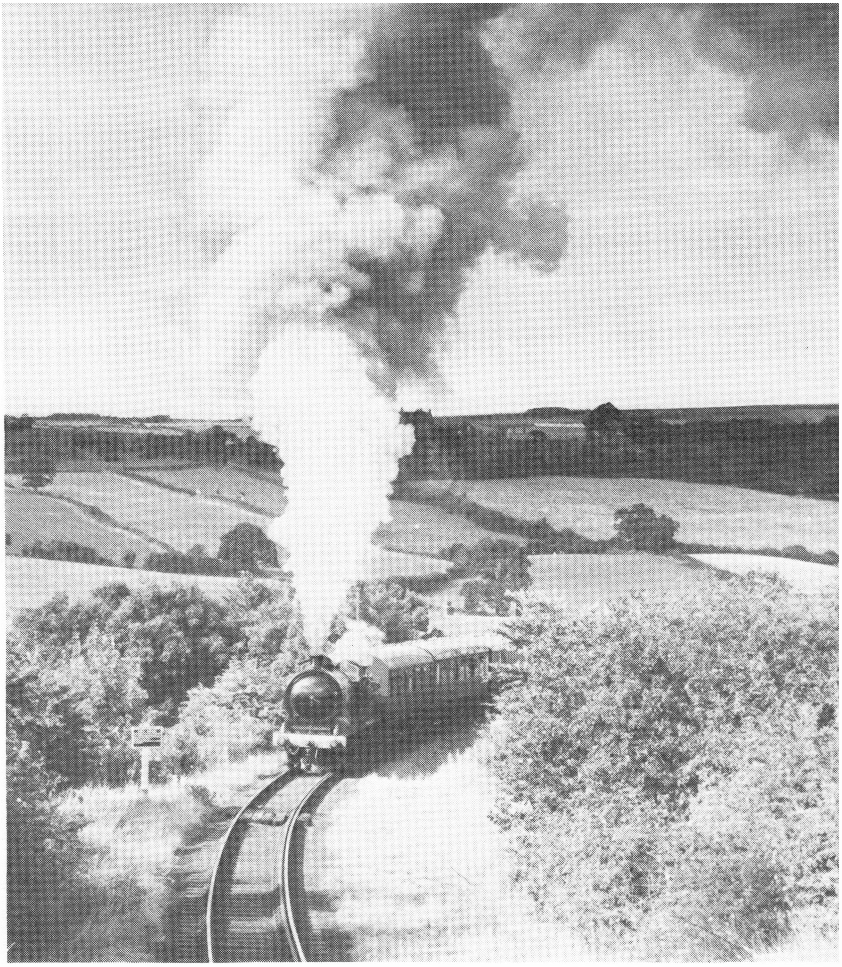
THE NORTH EASTERN

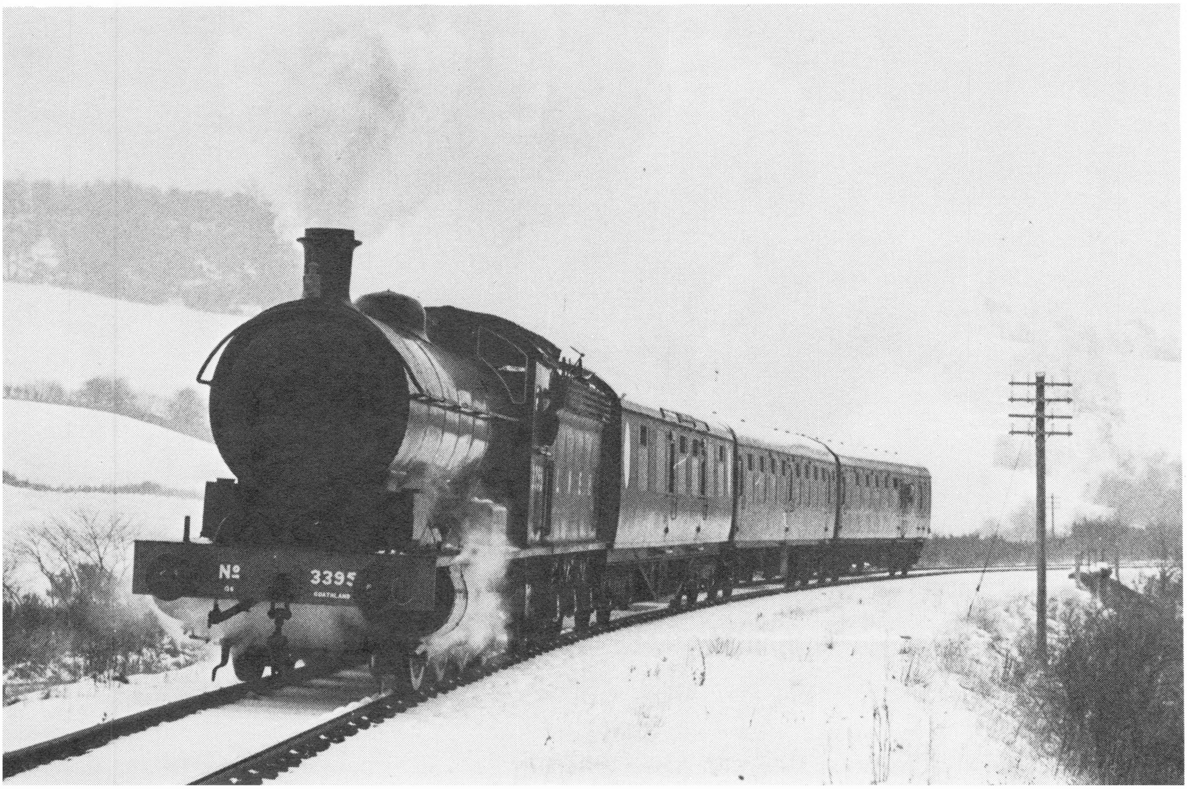
Left: *Darkening the North Yorkshire moors on June 8 1974 are the NYMR ex-Lambton Railway 0-6-2T No 5 and preserved K1 class 2-6-0 No 2005 as they climb out of Grosmont at the head of the 15.05 to Goathland.*/M. Hall

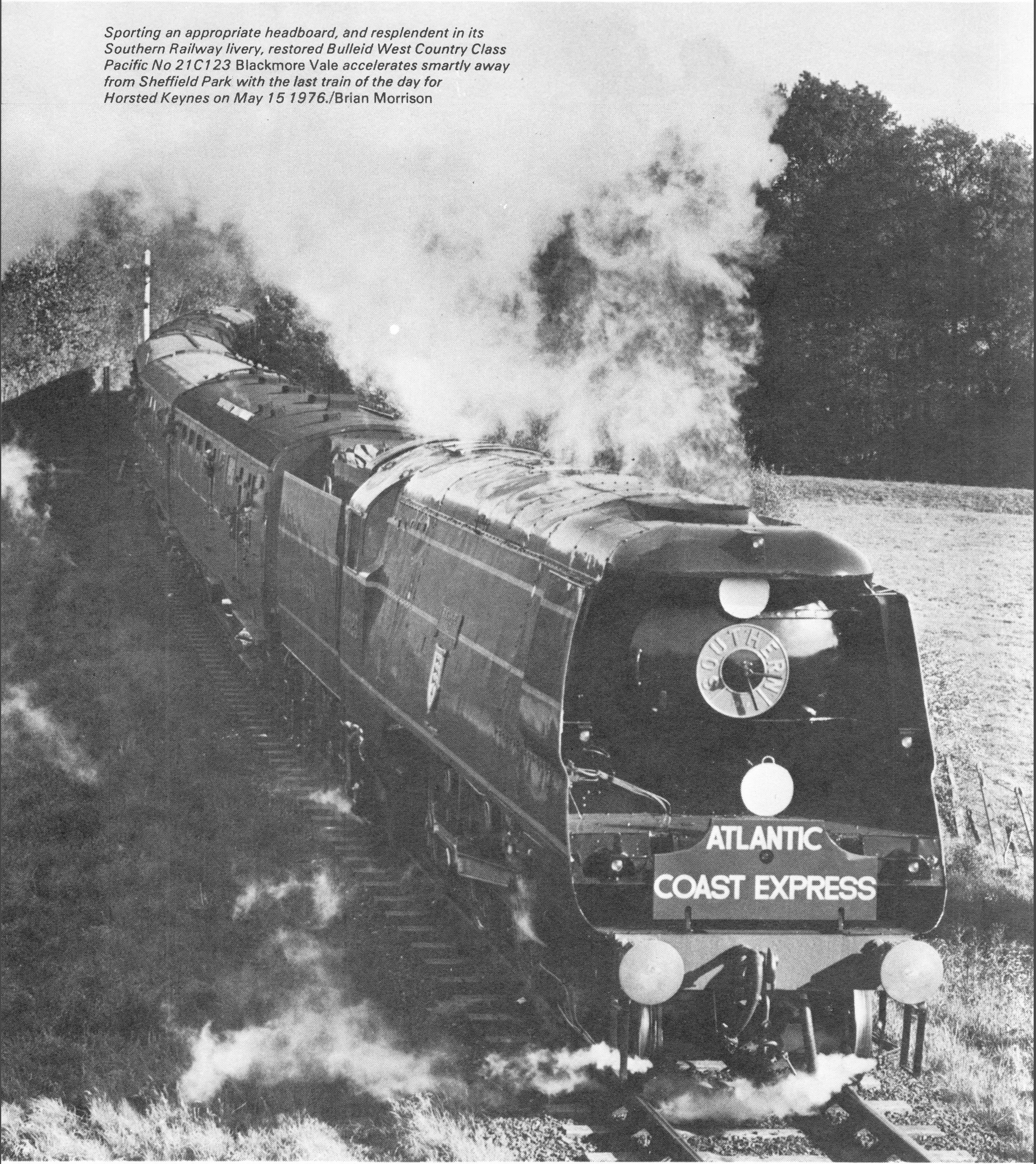
Below left: *The crew of Raven J27 class 0-6-0 No 2392 hands over the single line token as it rolls back into Grosmont with an NYMR special train on October 30 1971, past Q6 Class 0-8-0 No 3395 from the same stable waiting quietly in the foreground for its next turn of duty.*/John Hunt

Right: *Maximum effort! Preserved J27 Class 0-6-0 No 2392 battles uphill with a train for Goathland on September 16 1972.*/J. H. Cooper-Smith

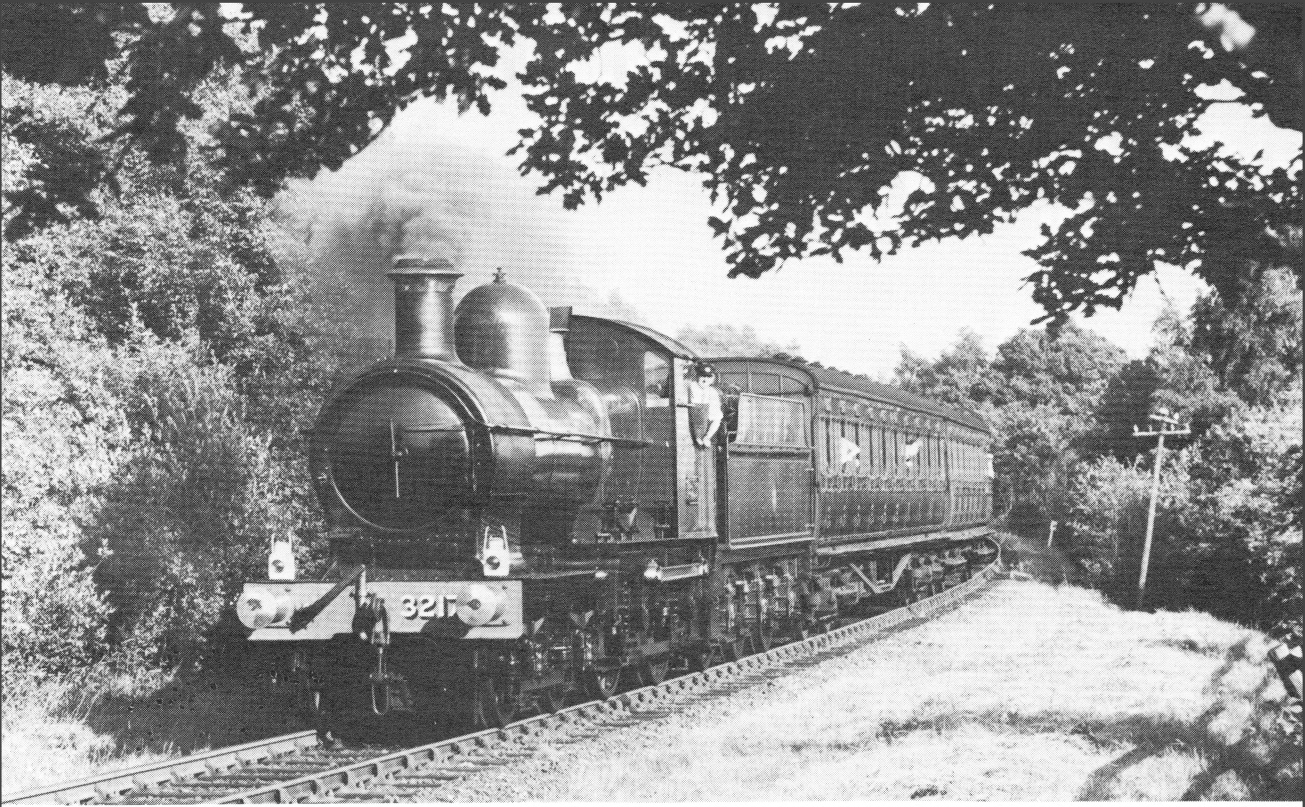
Below: *Against a chilly winter moorland backdrop, Q6 Class 0-8-0 No 3395 climbs towards Beck Hole with a NYMR special from Grosmont to Goathland on November 20 1975.*/L. A. Nixon





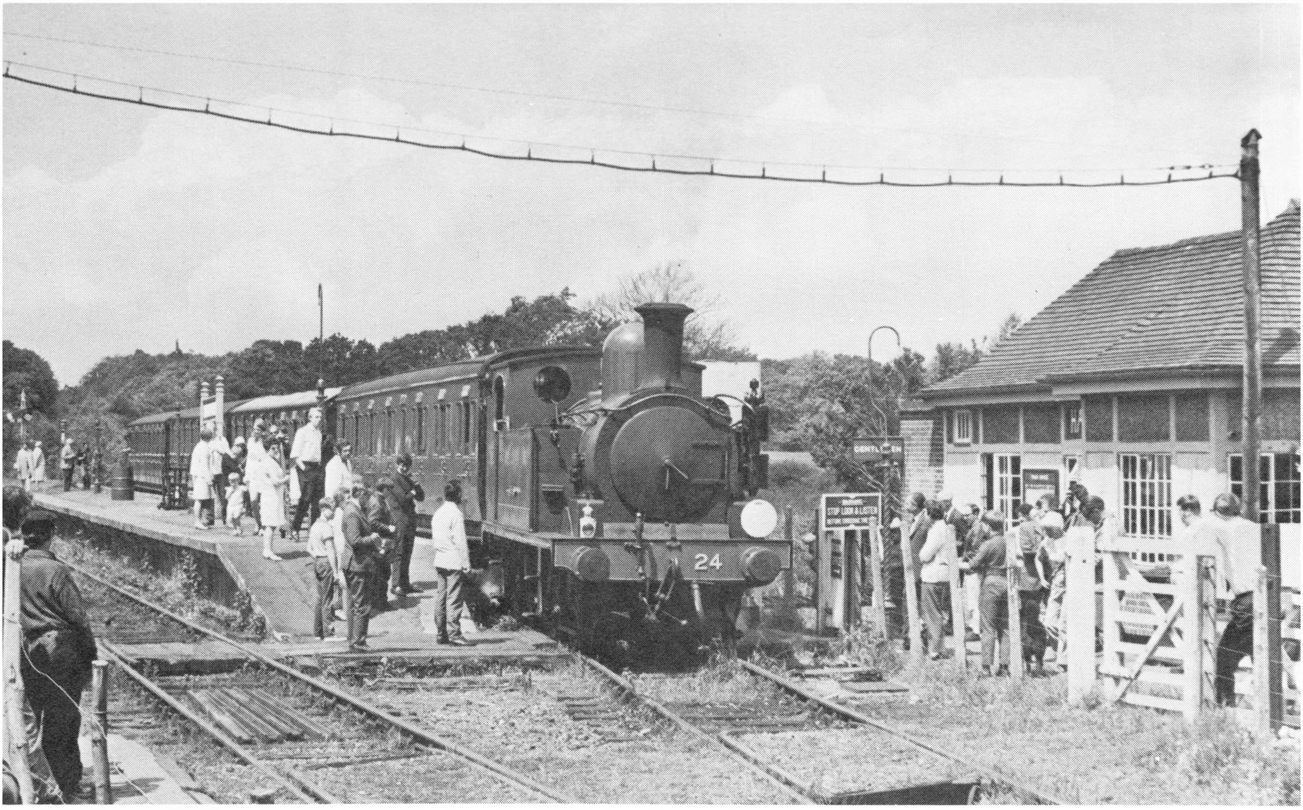

SOUTHERN
ATLANTIC
COAST EXPRESS

Sporting an appropriate headboard, and resplendent in its Southern Railway livery, restored Bulleid West Country Class Pacific No 21C123 Blackmore Vale *accelerates smartly away from Sheffield Park with the last train of the day for Horsted Keynes on May 15 1976.*/Brian Morrison



With just two coaches in tow, ex-GW Dukedog Class 4-4-0 No 3217 tops Freshfield Bank (above) on the Bluebell Railway with the 18.15 Sheffield Park-Horsted Keynes./P. H. Groom

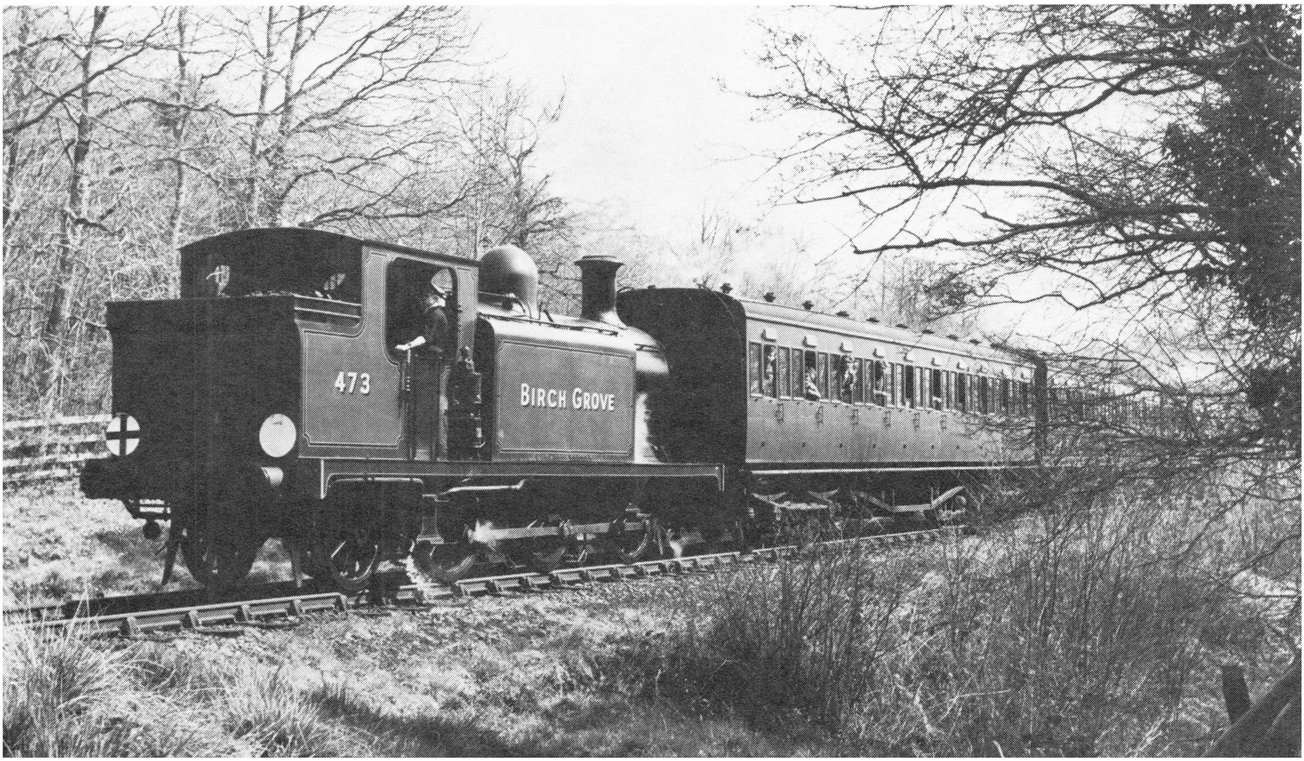
Dramatic exit; ex-SECR C class 0-6-0 No 592 leads ex-LSWR 0415 Class 4-4-2T No 488 in a rousing start from Sheffield Park (below) with the last train to Horsted Keynes on May 26 1975./Brian Morrison

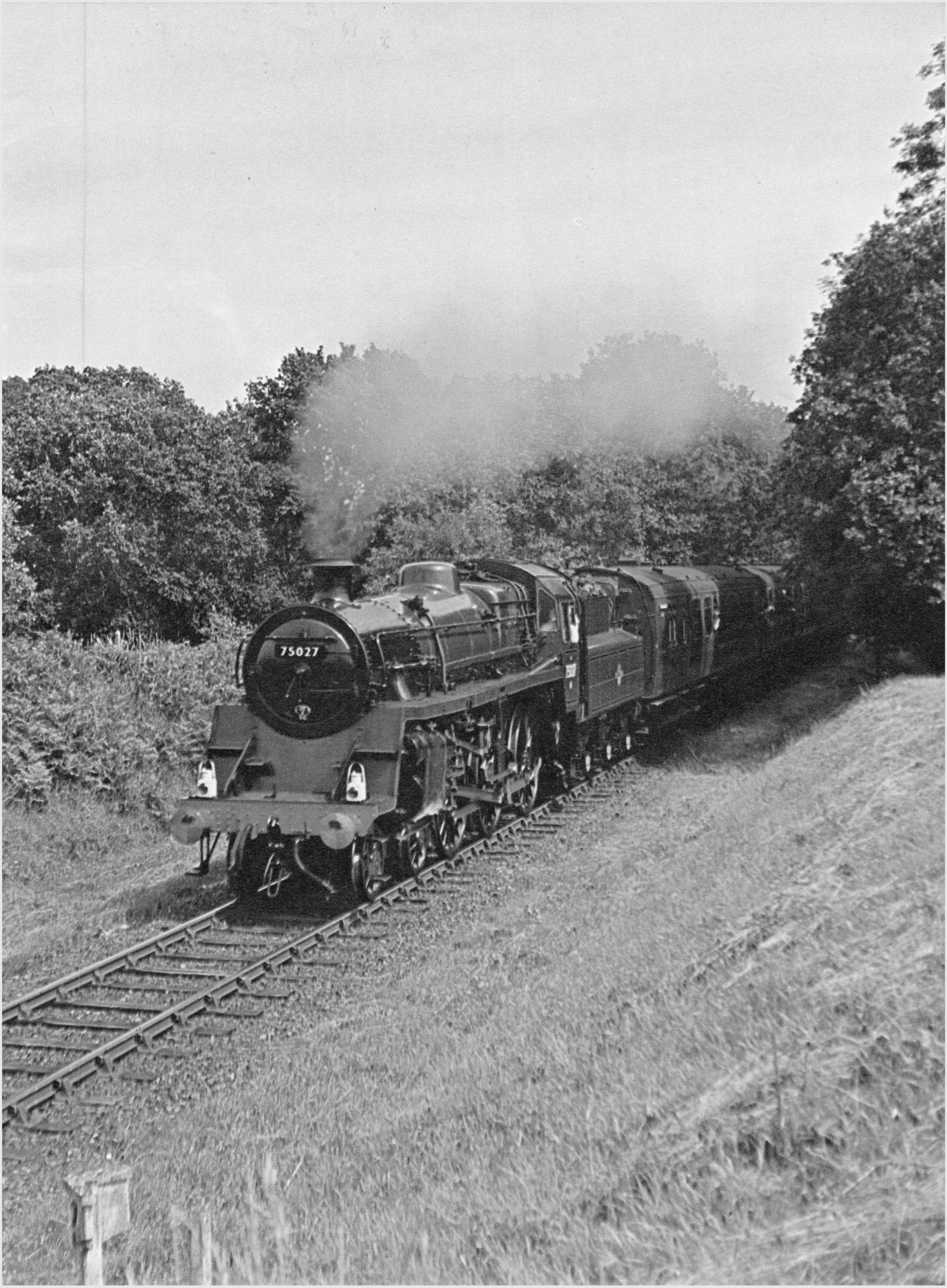


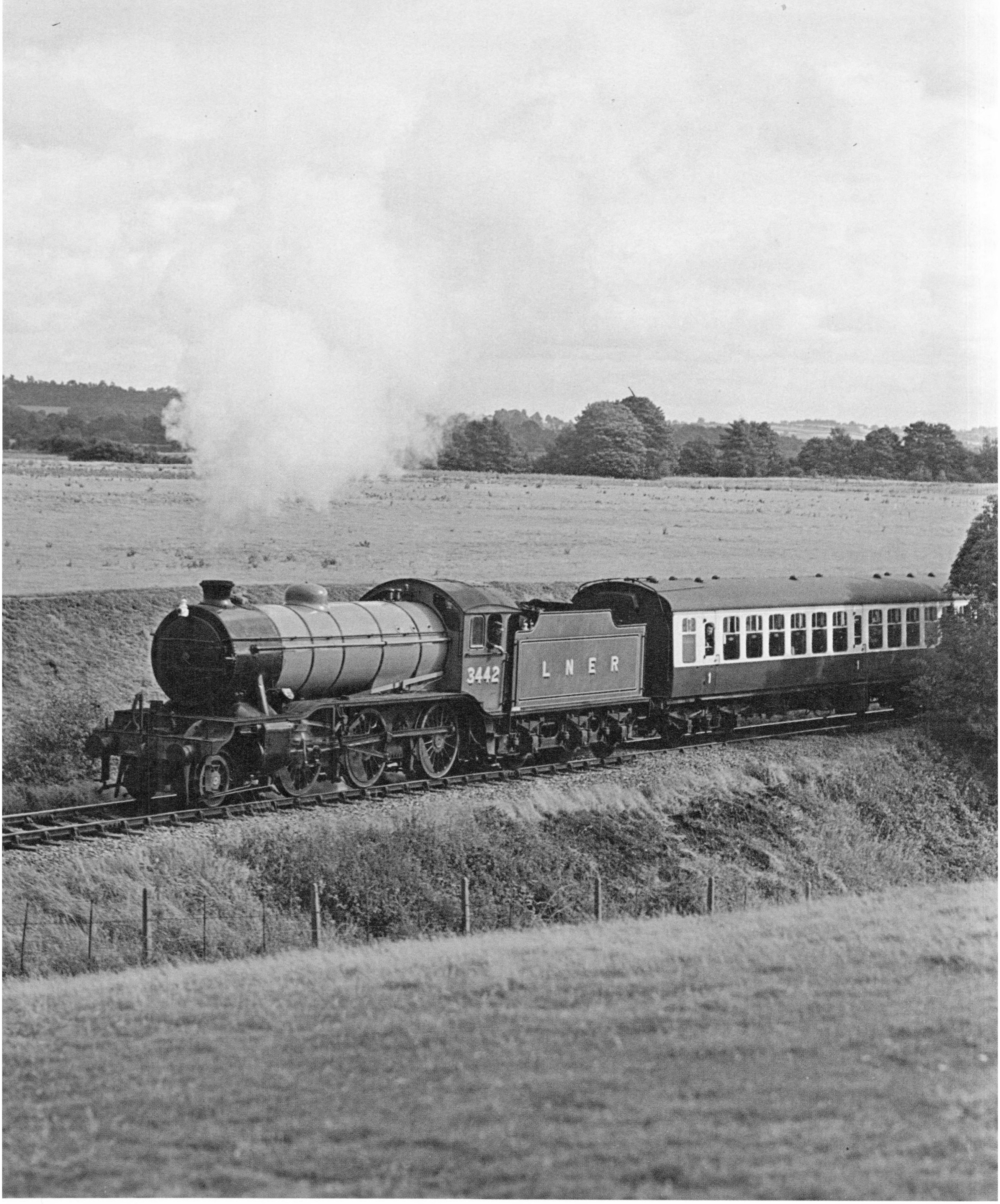
Above: *Another preserved ex-Southern Railway line is that on the Isle of Wight between Haven Street and Wootton, part of the IOW Central line from Ryde to Cowes. Not long after the line re-opened, and with evidence of plenty of work ahead on the permanent way, O2 class 0-4-4T No 24* Calbourne *arrives back at Haven Street on Whit Monday 1971.*/J. H. Bird

Below: *An early spring afternoon in 1968 finds Billinton ex-LBSCR E4 class 0-6-2T No 473* Birch Grove *heading bunker-first for Horsted Keynes with a Bluebell Railway train from Sheffield Park.*/A. G. Orchard

Right: *Out from the shade of the trees lining Freshfield Bank comes preserved BR class 4 4-6-0 No 75027, climbing in fine style with the 14.28 from Sheffield Park on July 21 1974.*/Allan Stewart



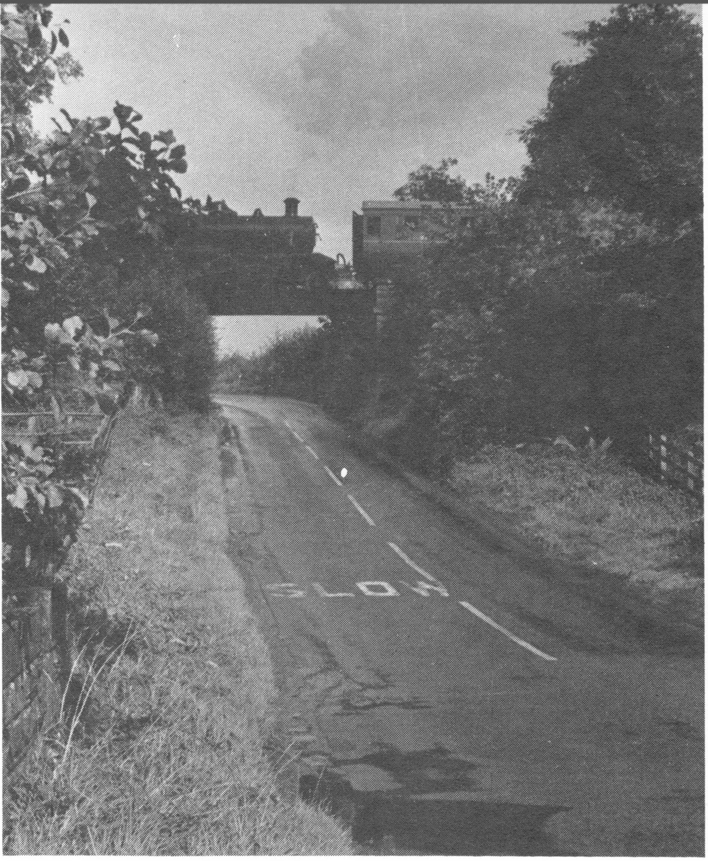

75027

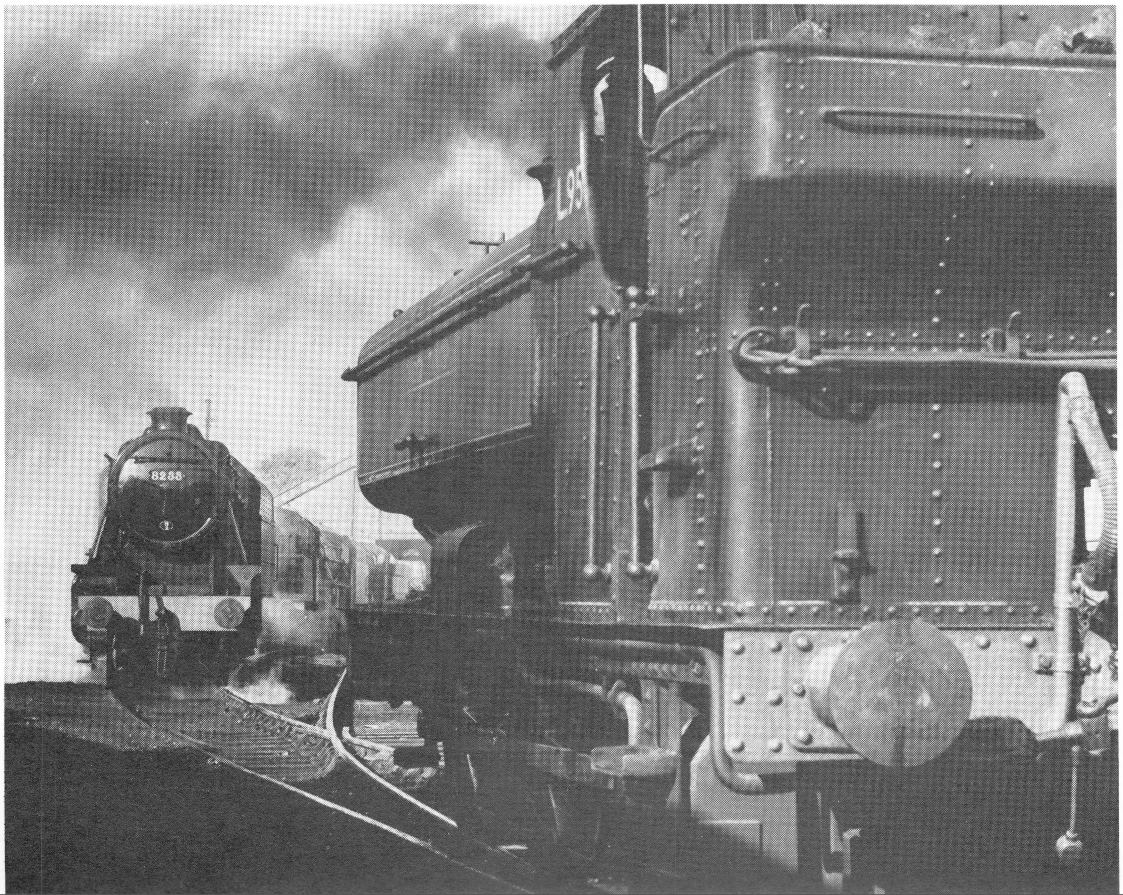

3442
L N E R
1
1

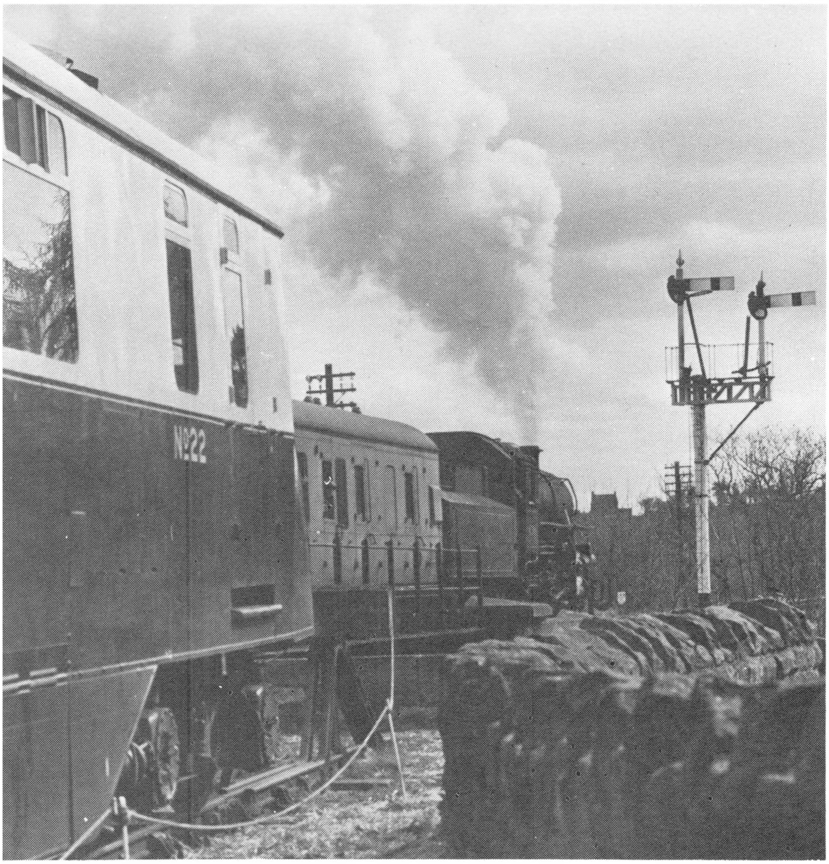
There's a hint of autumn in the trees as Gresley ex-LNER K4 class 2-6-0 No 3442 The Great Marquess *canters through the countryside near Eardington* (left) *on the Severn Valley Railway with the 14.35 Hampton Loade-Bridgnorth on September 29 1973.*/Brian Morrison

A summer shower dampens the scene (right) *as Ivatt Class 2 2-6-0 No 46443 crosses the Highley road with a Hampton Loade-Bridgnorth train on September 1 1968.*/R. E. B. Siviter

Busy scene at Bridgnorth; newly-arrived ex-GWR 5700 class 0-6-0PT No 5764, still sporting its London Transport livery and No L95, meets Stanier class 8F 2-8-0 No 8233 (below) *on October 30 1971.*/Roger Hooper





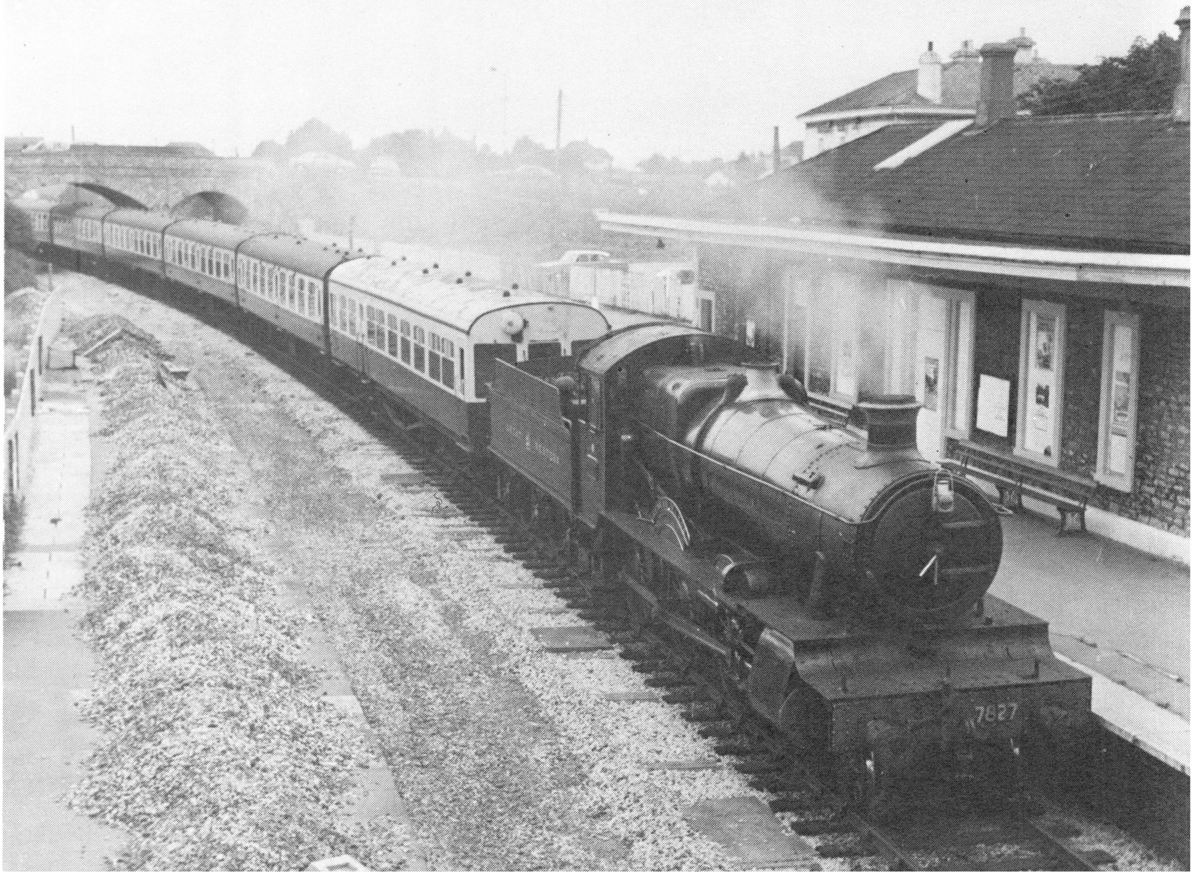


Left: *Ivatt class 4 2-6-0 No 43106 sets off for Hampton Loade with an afternoon train from Bridgnorth and passes preserved GW railcar No 22.*/C. B. Parish

Below: *Into Churston on what is now the Torbay and Dartmouth Railway sweeps ex-GWR 7800 class 4-6-0 No 7827* Lydham Manor *with an afternoon train from Paignton to Kingswear on August 9 1974.* /Dr. I. M. Warman

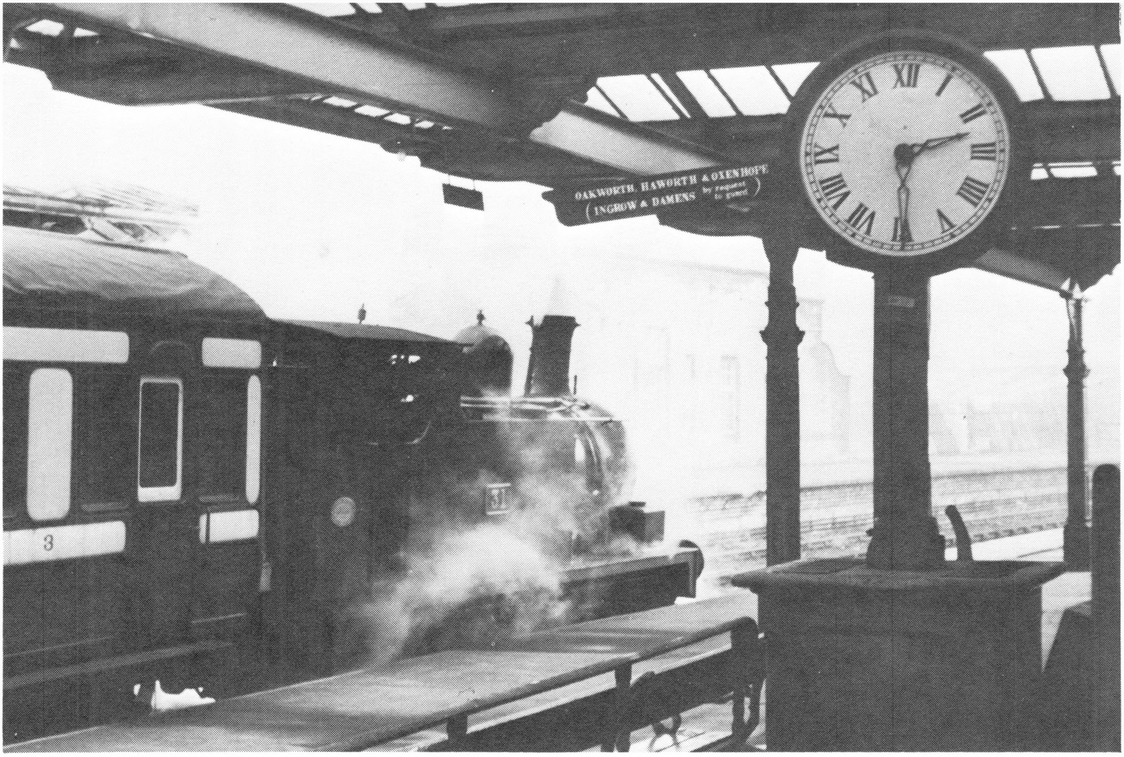
Right: *Despite the seven coaches on its tail, ex-GWR 4575 class 2-6-2T No 4588 makes smart progress up Greenway bank, near Churston, with an afternoon Kingswear-Paignton train on May 28 1975.*/L. A. Nixon.

Below right: *Newest of the preserved ex-GWR lines in the West Country is the West Somerset Railway, which hopes eventually to re-open the line from Taunton to Minehead. Here ex-GWR 6400 class 0-6-0PT No 6412 makes a leisurely start from Minehead with the 14.00 to Blue Anchor on July 11 1976.*/Brian Morrison



GREAT WESTERN
4588

G W R


OAKWORTH, HAWORTH & OXENHOPE
INGROW & DAMENS by request to guard
31
3

*Keighley Station on a misty January day in 1969 provides a perfect period setting (*above*) for Manchester Ship Canal Co 0-6-0T No 31 as it awaits the off with the 14.30 to Oxenhope.*/Ian G. Holt

*For its special Enthusiasts' Weekend in April 1976, the Keighley and Worth Valley Railway organised some special freight workings, one of which is seen (*below*) about to leave Keighley for Haworth in the charge of preserved Midland class 4F 0-6-0 No 43924.*/L. A. Nixon

Prior to the opening of the National Railway Museum in York, where it is now on display, BR Standard class 9F 2-10-0 No 92220 Evening Star, *the last steam locomotive built by British Railways, was loaned to the KWVR. Aided by 0-6-0ST No 62, it is darkening the skies above Keighley (*right*) as it makes a spirited start with the 14.08 to Oxenhope on Members Day, March 22 1975.*/D. M. Scott

43924
MANNINGHAM

92220

Officers Specials

Michael R. Bonavia

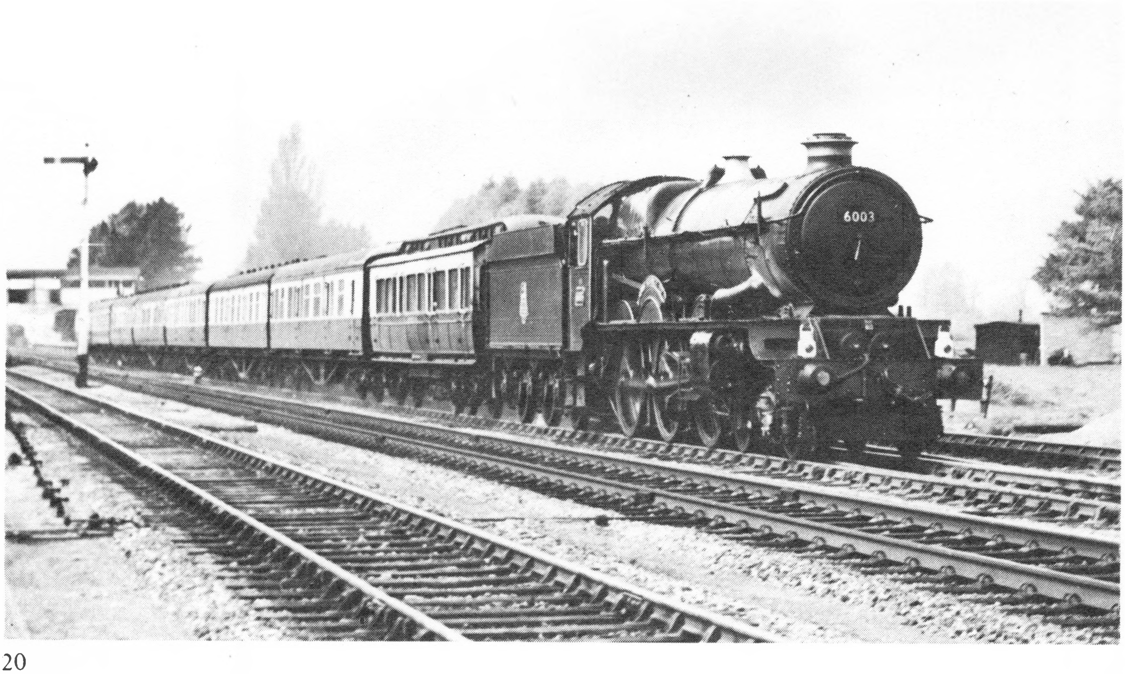
Just as the stage-coach was replaced by the regular passenger train, so the post-chaise was replaced by the special train. An atmosphere of romance surrounded the post-chaise — one thinks of eloping couples pursued by angry fathers — and many special trains inherited the romance. In history, when railways were king, there were trains carrying Queen's Messengers with despatches that might mean peace or war; in fiction there was the train by which Professor Moriarty pursued Sherlock Holmes and Watson to Dover on the journey that ended at the Reichenbach fall.

Less romantic but much more necessary is the class of special train which travels around the system for inspection purposes, usually away from the limelight — the "officer's specials", as they are designated in the Working Notices. There has always been a need for senior railway officers to have facilities for inspecting track and installations the length and breadth of the system and, if necessary, to get rapidly to the site of an incident. In the early days the usual practice was to commandeer a locomotive — just as the special train replaced the post-chaise, so a light locomotive could replace a horse!

Brunel was typical of many early engineers in frequently being on the footplate although, exceptionally among his profession, he usually preferred not to drive himself because, he said, his brain was so active on many projects that he found it hard to concentrate on driving! Even so, he one day arrived unexpectedly at Paddington from Bristol and,

Below: *Although looking decidedly ancient alongside more modern rolling stock, this clerestory saloon was still in front line duty on April 30 1954, heading the load on the tail of King class 4-6-0 No 6003* King George IV *as it hurtles up through Hullavington at almost 90mph on one of the test runs prior to the introduction of the 'Bristolian'.*/Ian Allan Collection

Below right: *Test Coach Mercury was originally a BR Standard Brake Composite but now, fitted with new bogies and packed with electronic equipment, it is used by the BRB Research and Development Division and is here wheeling north in a Birmingham train behind class 86 25kV Bo-Bo No 86046 on track transponder evaluation trials.*/British Rail



descending from the footplate covered with smuts, merely remarked: "I found this engine with fire up, so I ordered it out and have driven it the whole way up at 50 miles an hour." As late as 1865, when Eborall, the General Manager of the South Eastern Railway, was told of the Staplehurst accident, he departed immediately for the site by "a special engine". One wonders whether in his haste he infringed the 60 mph speed limit then rigidly enforced over the entire SER system!

In *Red for Danger*, L. T. C. Rolt has remarked how the early concept of the railway "as merely a specialised form of the King's Highway" died hard. "Trains, or especially light engines, had a way of appearing when or where they were least expected ... Engineers would commandeer a locomotive from the shed as light-heartedly as they would take a horse from the stable and drive themselves away, sometimes on the wrong road."

Thankfully, those days are now long-since passed. But for careful inspections to be carried out in all weathers, for holding meetings on the spot, and for a certain minimum of creature comforts, something more than the footplate's facilities was needed. Railways, in addition to building family and invalid saloons which could be hired by private parties, built considerable numbers of saloons for use by senior officers of appropriate status. The standard of accommodation varied immensely; the most spartan would probably take the form of an "inspection cab" fitted to the rear of a small locomotive instead of the conventional coal bunker. The most famous of these was of course Dugald Drummond's 4-2-4, known as "The Bug", in which he commuted daily between his home at Surbiton and the LSWR locomotive works at Nine Elms and, later, to Eastleigh when the works moved there. But there were others, such as the LNWRs rebuild of an Allan outside-cylinder 2-2-2 and its attachment to a combined tender and inspection saloon on six wheels. It bore the legend 'INSPECTOR' in large letters on the cab panels — perhaps as a warning to the staff!

The more conventional type of officer's saloon, however, is an open coach which can either be attached to the tail of a service train or be specially hauled. Such vehicles varied from elderly six-wheelers, which might be handed down for use by a District Engineer, to sumptuous bogie vehicles reserved for the Chairman and Directors. One end of such vehicles was generally equipped as an observation car, whilst the other would usually contain a table set lengthwise that could be used either for meetings or for meals. Lavatory and kitchen facilities, as well as a staff rest compartment, were often provided in the centre of the vehicle.

In Britain, sleeping accommodation was not normal in officer's saloons, but on many overseas railways extended inspection tours were often needed and in the absence of hotel accommodation the saloon became the temporary home of the staff on tour. Frequently, the standard of comfort was greater, especially in tropical countries, than could normally be found

Test Coach Mercury
RDB 975280
Restriction
C1
TTC 100
Inter-City

elsewhere in the days before showers and refrigerators became common amenities. Touring Ghana on a consultancy visit in the days when that country was still the Gold Coast, the kind loan by the General Manager of his saloon for a week proved to be the high spot of my trip!

Before the War, appointment to a post that carried with it the entitlement to a personal saloon was an exciting landmark in a senior officer's career. It was the equivalent of the naval officer's Flag rank. Railway Companies, however, varied a good deal in their attitude towards the provision of officers' saloons — some appeared generous while others were quite the reverse! The saloon was a useful work tool, but it has to be admitted that on occasions it proved an ideal excuse to get away from desk work! Before the use of cars became general, a senior railway officer's inspections might only really be practicable by using a saloon that could be stopped away from passenger stations, tucked away in sidings, reversed or propelled as necessary. Using service passenger trains and walking to sites would have involved countless wasted hours. To some extent, the motor car has altered life in this respect — railway officers can now visit sites by a combination of train and car. But even today the saloon retains many advantages, for work need not stop whilst travelling — something that is often impossible if railway officers are sharing accommodation with passengers and their conversations can be overheard. Moreover, local officers can be invited aboard at each stop and problems discussed on the spot over lunch. Prolonged inspection stops can be made and, when desirable, the saloon can be propelled slowly and as required, giving those in the observation end the best possible view.

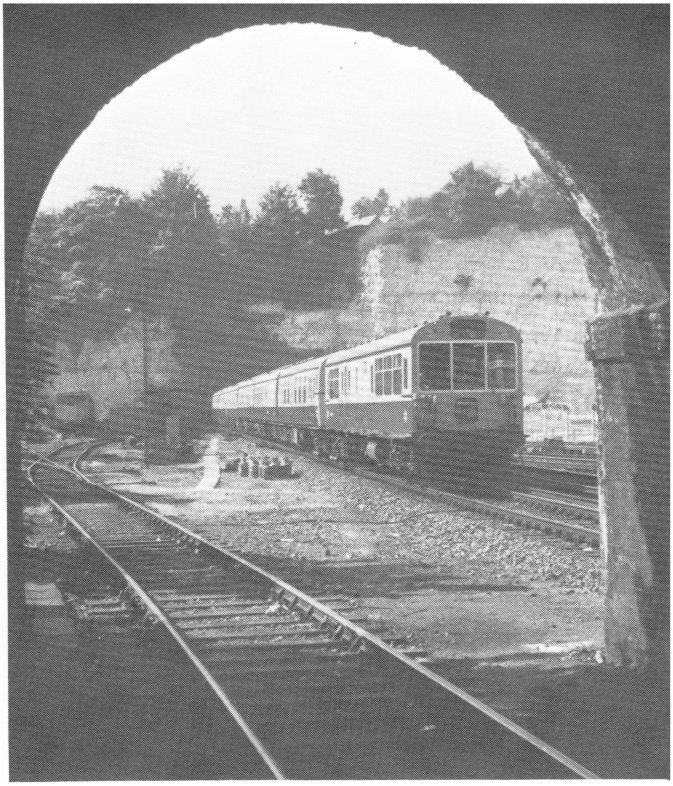
In addition to their important internal function, saloons can be used to show visitors aspects of the railway that may be relevant to current policies but otherwise inaccessible. The need for major new works can be demonstrated to politicians and civil servants who might otherwise make their judgements purely on the basis of papers they read. The interest shown by visitors who are invited to see something of the railway's problems by means of a day in an officer's saloon is usually keen. In Company days — and even to some extent since Nationalisation — a saloon trip was the recognised means of awakening the interest of important customers in the services and facilities that could be offered.

There is of course a world of difference between merely attaching a saloon to the rear of a normal service train, and hauling it as a special. If a substantial distance has to be covered, attaching a saloon may be more convenient than reserving a number of compartments, and possibly depriving passengers of seats. But for detailed inspections and on-site meetings, special workings are essential, although the timings laid down in the Special Notices have to be observed strictly — or there will be complaints the next morning from the Movements Manager!

The arrival of a saloon on an "officer's special" always interests the local staff — it is a form of showing the flag that an arrival by car cannot emulate. At one time the General Manager of the Scottish Region used the restored Neilson-built Caledonian Railway single No. 123 to haul his saloon, and as can be imagined, the interest this created amongst both passengers and staff was immense. Many railways reserved particular locomotives for hauling officer's specials, although they were not always of the same calibre as those reserved for Royal specials! The LNER had an Ivatt D3 4-4-0, then nearly half a century old, earmarked for such jobs, and I vividly remember the embarrassment when, slipping furiously, it completely failed to propel the Chief General Manager's saloon up the hump at Wath marshalling yard, and the subsequent planned majestic trip through the sidings by the distinguished party had to be abandoned! I tried hard to persuade Edward Thompson, then CME, to return Patrick Stirling's single No. 1. to service for officer's specials, partly as a public relations exercise, but without success. It was, however, not so much the gradient of the Wath hump, but rather the rumour that the frame was cracked that proved the obstacle.

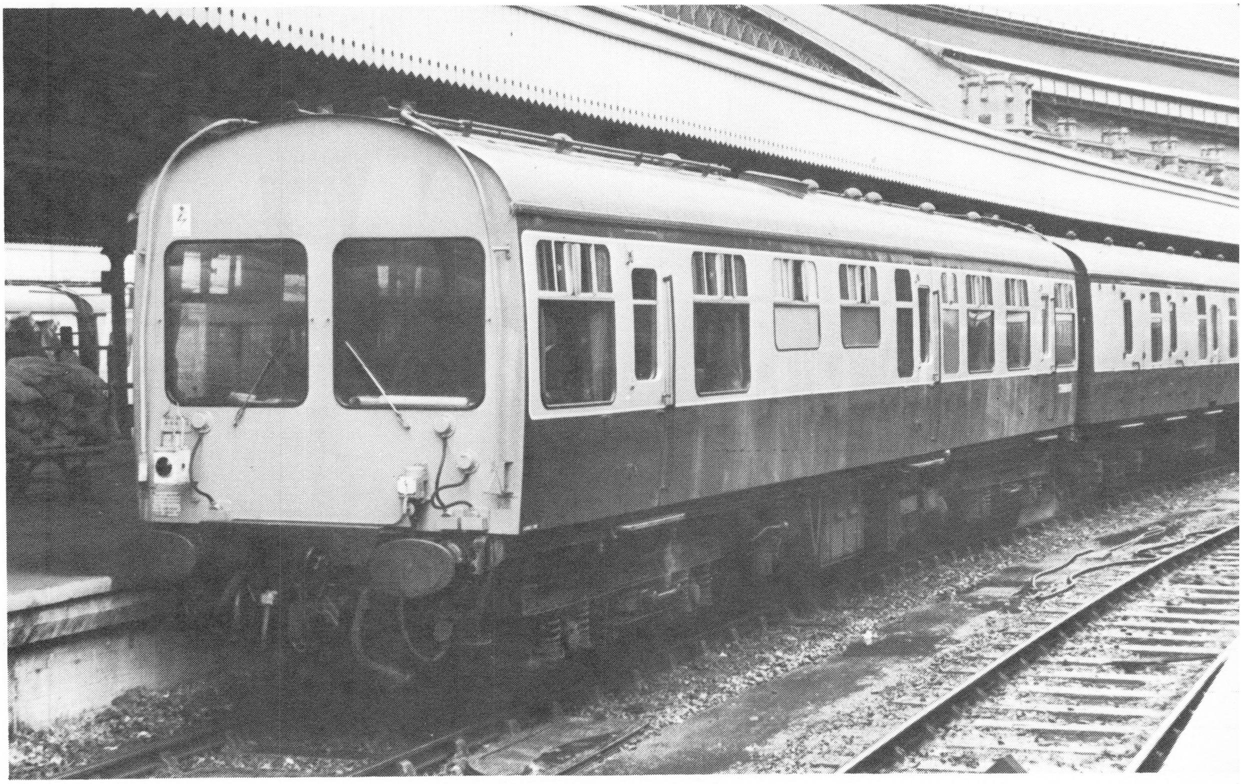
There is a railway tradition of offering hospitality to visiting staff in saloons (and very agreeable it is, without being lavish or excessive), but there is always the possibility of criticism from the public on the lines that, if fare-paying passengers cannot enjoy such facilities, why should railway officers? In Britain at least the Puritan backlash is always lurking somewhere! For this and other reasons, the use of both saloons and officers' specials has considerably declined. During the War, of course, when train catering was either totally lacking or severly restricted, there had to be a clamp-down. And, in any case, coal and motive power were in short supply.

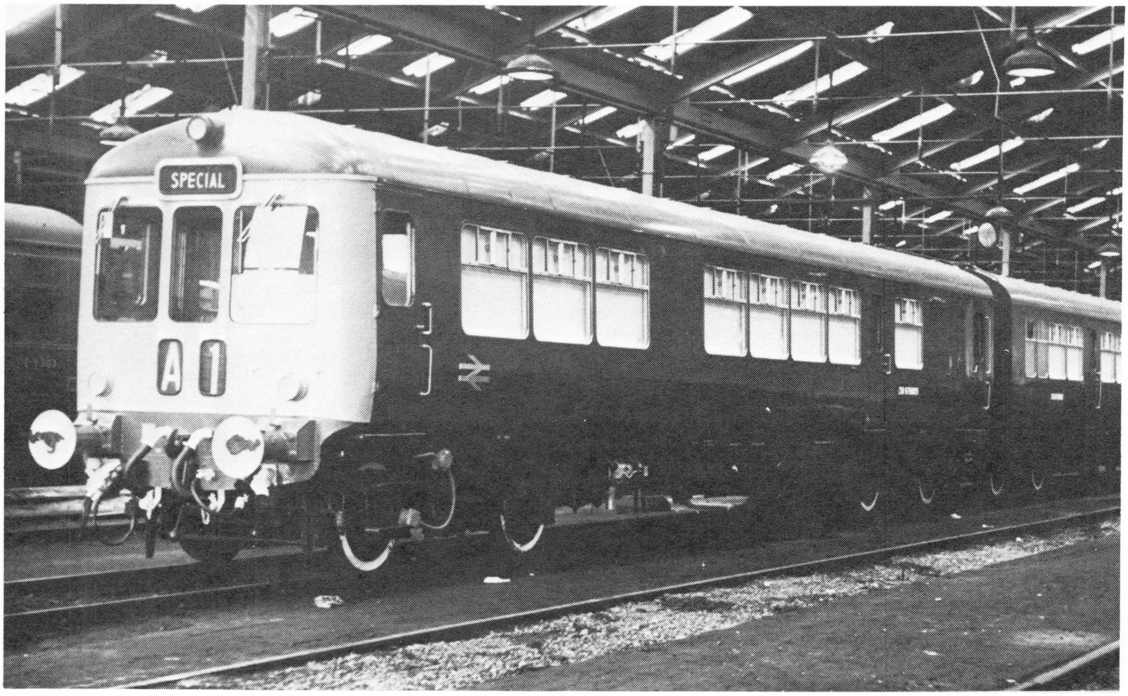
After the War, the then Chief General Manager of the LNER had a fine new saloon built, and it was subsequently used by the Chairmen of the Railway Executive and the BTC. But other examples have been few and far between, and for the most part, the now ageing fleet of pre-war vehicles has to be used. Of course, the relatively small annual mileages worked by the saloons ensures that they are in fairly good condition. The financial stringency of recent years has led to a drive to earn additional revenue by hiring officers' saloons for party travel when they are not required for official use.

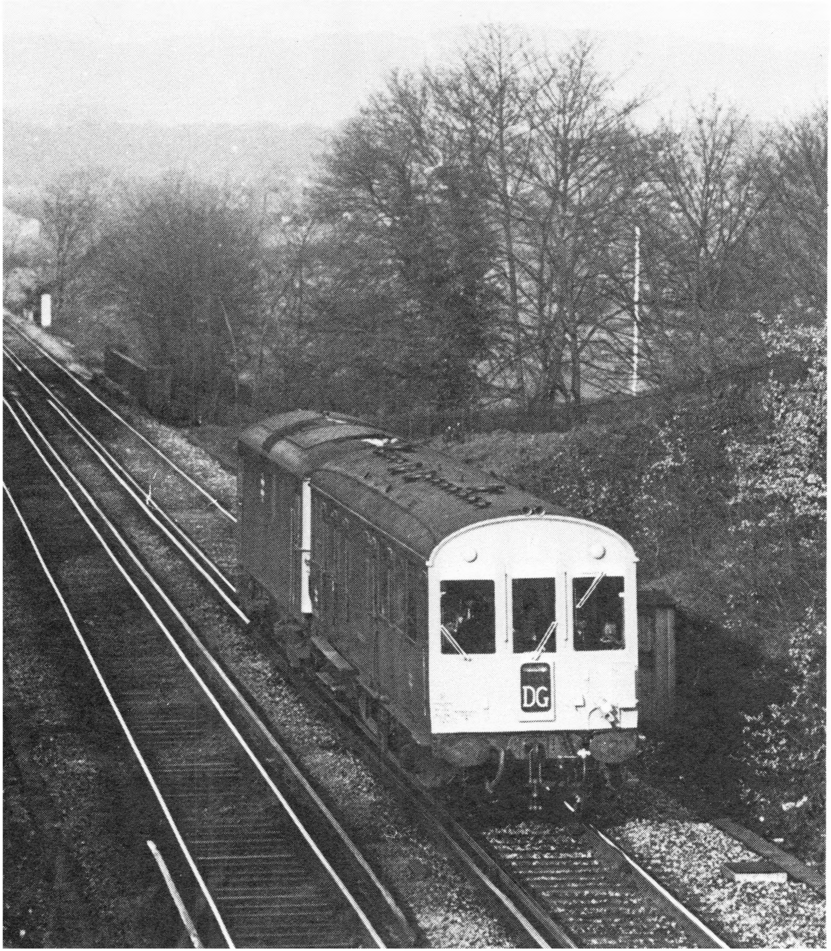


*Perhaps the most impressive of all inspection saloons because of its sheer versatility is the SR General Manager's saloon, seen (*right*) on the tail of the 08.50 Waterloo-Portsmouth Harbour as it leaves Guildford on June 2 1970, the first day of operation of new 4CIG and 4BIG units on the Portsmouth line. The saloon was converted from a Hastings diesel unit buffet car and has driving positions at each end, a lavatory, pantry and conference room, wide panoramic windows, headlights, two-character headcode panel and current collection equipment. It can be worked in multiple with both electric and diesel-electric multiple units, by both types of SR electro-diesel, and by multiple-unit equipped class 33 diesel locomotives!*/J. Scrace

*Of similar appointments but converted from a BR standard vehicle of orthodox profile is the Western Region General Manager's saloon TDB 999506, seen (*below*) at Bristol Temple Meads. It too can be propelled by a variety of locomotive types and is equipped with control positions, panoramic windows and two-tone warning horns.*/G. R. Hounsell







*The Eastern Region General Manager's saloon takes the form of a refurbished and re-equipped Wickham two-car diesel unit (*above*). Embellishments include the aluminium BR arrow symbols applied by York to SR electric stock in the mid 60s and removed by Eastleigh with equal enthusiasm a few years later!*/M. S. Field

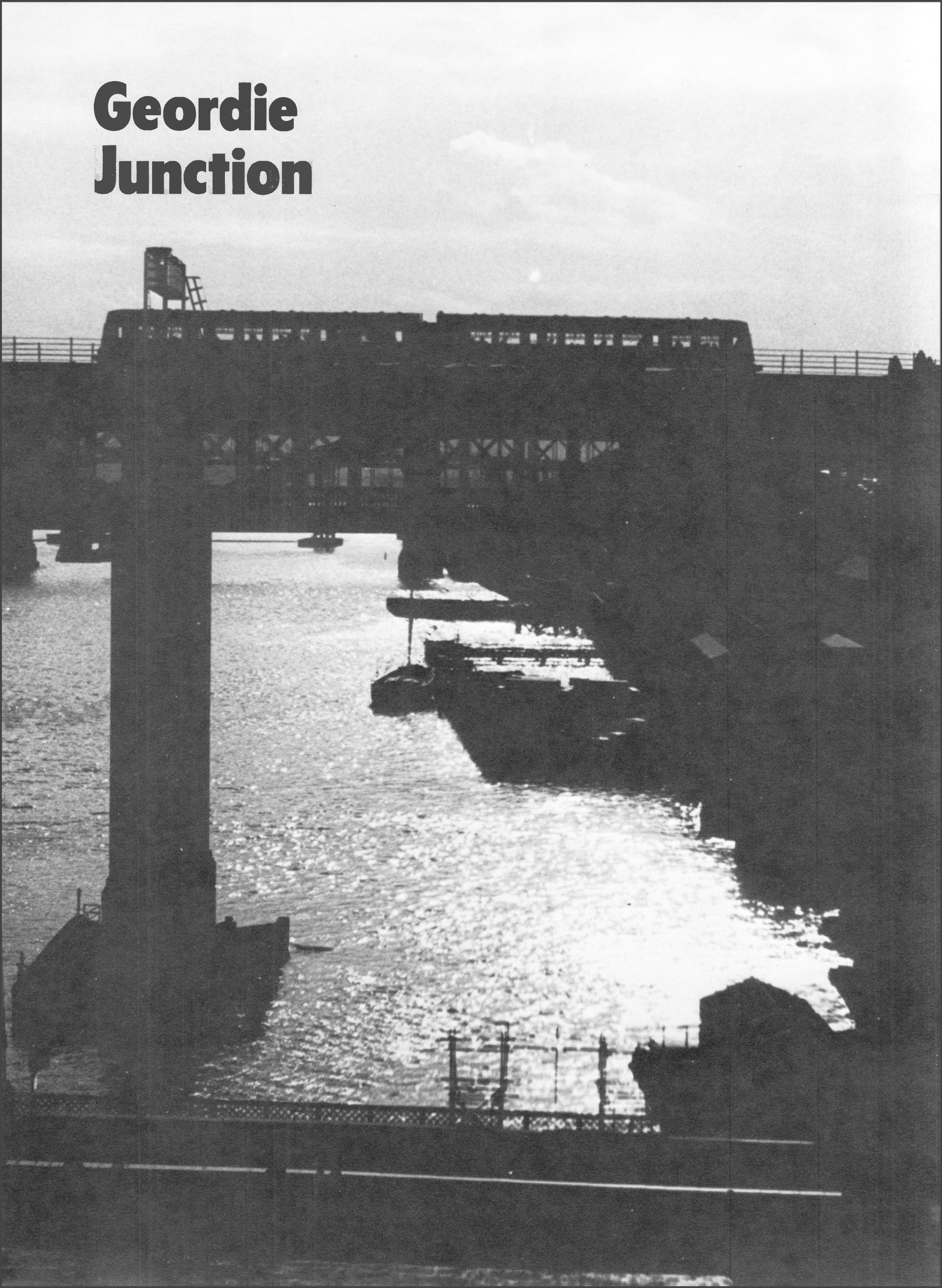
*Representative of an earlier generation of Southern inspection saloons is this converted Maunsell Hastings-line corridor second, heading south near Tonbridge (*below*) on December 9 1976 propelled by a class 73 electro-diesel.*/Kevin Lane

When the preserved GW City class 4-4-0 City of Truro *was returned to service in 1957 for use on special trains, it was envisaged that it would earn its keep by also powering inspection specials as required, and it is on this latter duty that No 3440 is hurrying through Leamington (*above right*) on September 8 1958.*/R. J. Blenkinsop

The change over the last two decades from steam to diesel and electric traction has also had an adverse effect on the working of officers' specials. The much smaller number of diesel and electric locomotives, for instance, and their intensive working diagrams, contrasts with the old régime when you could almost always find a spare steam engine at practically any motive power depot to work a special at short notice. As a result, there is now a preference for saloons, wherever possible, to be attached to locomotive-hauled service trains. This arrangement, of course, while cheaper, does not allow either the flexibility of operation or the general inspection facility that is possible in a saloon being propelled with the observation end leading. For this purpose, a dmu, with its two observation ends, and the essential services grouped between would seem ideal and it is surprising that more use has not been made of dmus for inspection work. Even better is the saloon rebuilt from a Hastings line diesel buffet for the Southern Region's General Manager a few years ago. It is unique in that it has a full driving position and headcode panel, and a mass of jumper cables that enable it to work in multiple with both electric and diesel multiple-units or locomotives, and thus to work with almost any type of train. Its versatility makes it peculiarly suitable for use on this Region, where the intensity of the train service is often such that the working of locomotive-hauled specials invites unpopular comment from the Movements staff!

It remains true, despite restrictions imposed in recent years on general policy grounds, and the now widespread use of cars to reach isolated railway sites, that a trip in an officer's special is an instructive and usually enjoyable experience. In the morning, the saloon stands in the terminus, its blinds drawn and a vigilant inspector checking the credentials of those seeking to board . There are the handshakes and the old friends unexpectedly encountered; there is a quick check that the party is complete before the starter clears and the train pulls out. The blinds are raised and work starts; ahead lie some eight hours of watching the track (and perhaps pulling the Divisional Civil Engineer's leg about some minor defect); inspecting structures; consulting plans and arguing about alternatives; explaining; defending and possibly even agreeing the decisions to go on record. Lunch is certainly a pleasant break, at which one is usually joined by the Area Manager in whose territory you are. He, poor chap, is almost always on the defensive, and undergoes intensive questioning which quite effectively spoils his meal for him! Eventually, the special will return in the thick of the evening commuter traffic, earning some curious glances from the crowds hurrying past to board their homeward train as it slips into a spare platform at the terminus and its occupants disperse — already thinking of to-morrow's paper work!

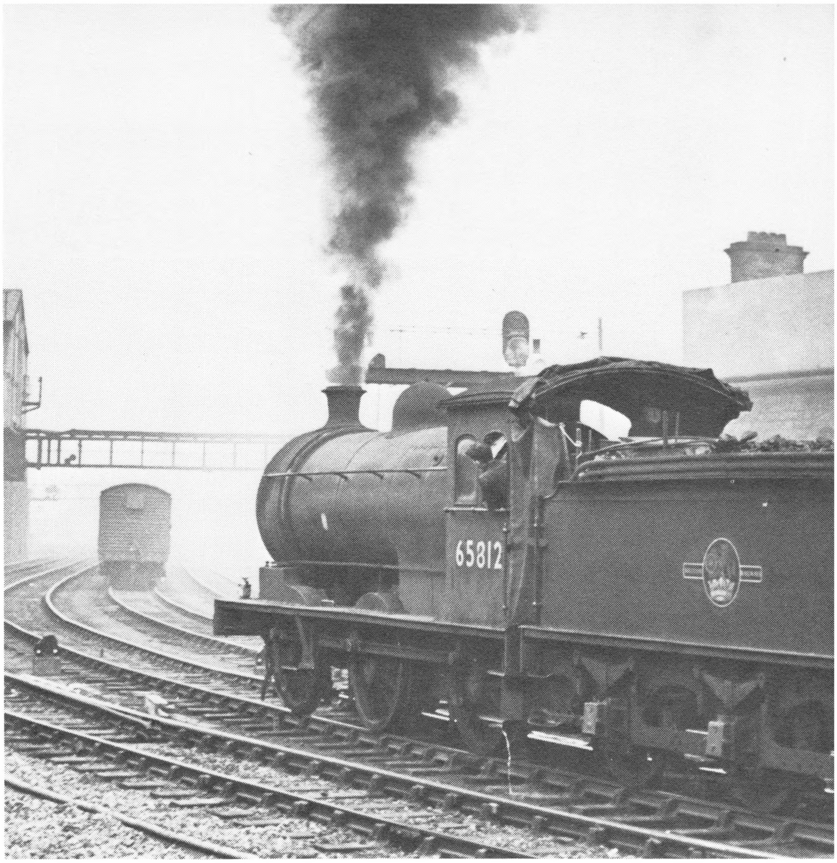
Geordie Junction

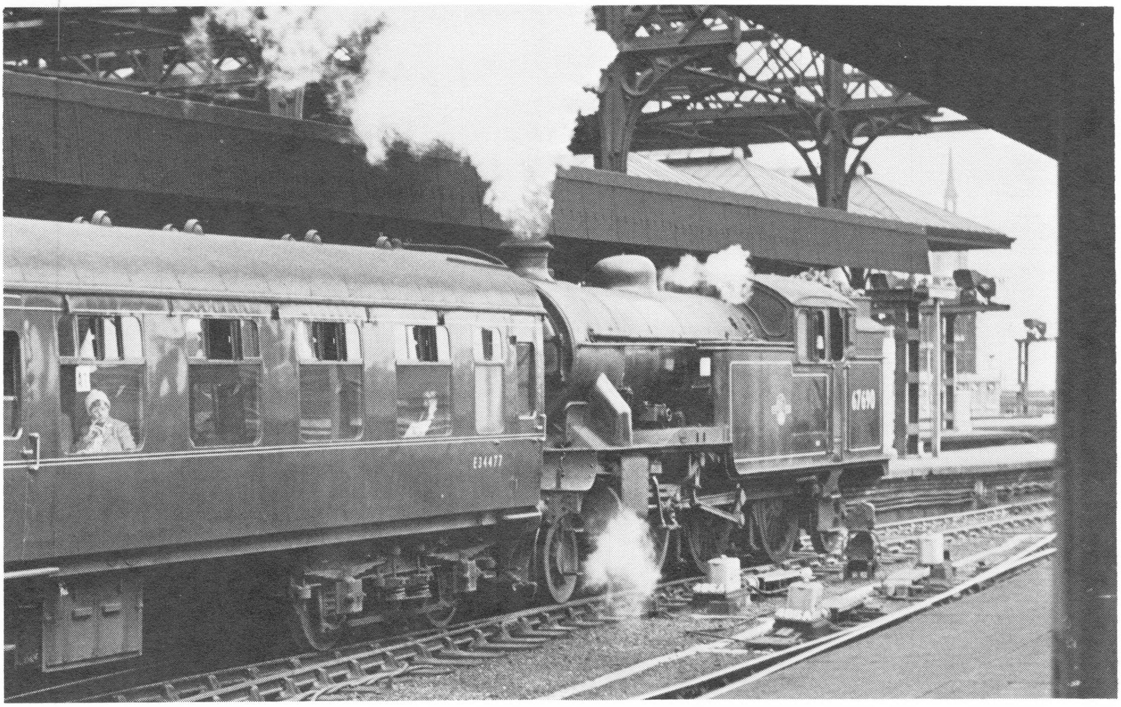


*Although it is well over half a century since its progenitor ceased to exist, and the fortunes of railways in the North East have suffered somewhat since, Newcastle Central is still very much the busy junction the NER created, perched high above the Tyne alongside the City centre. To reach it from the South, trains must cross the river by either the lofty King Edward Bridge or the High Level Bridge, and it is across the latter from Gateshead that a Metro-Cammell twin unit rumbles (*left*) on the last stages of an evening working from Sunderland on September 21 1975.*/J. H. Cooper-Smith

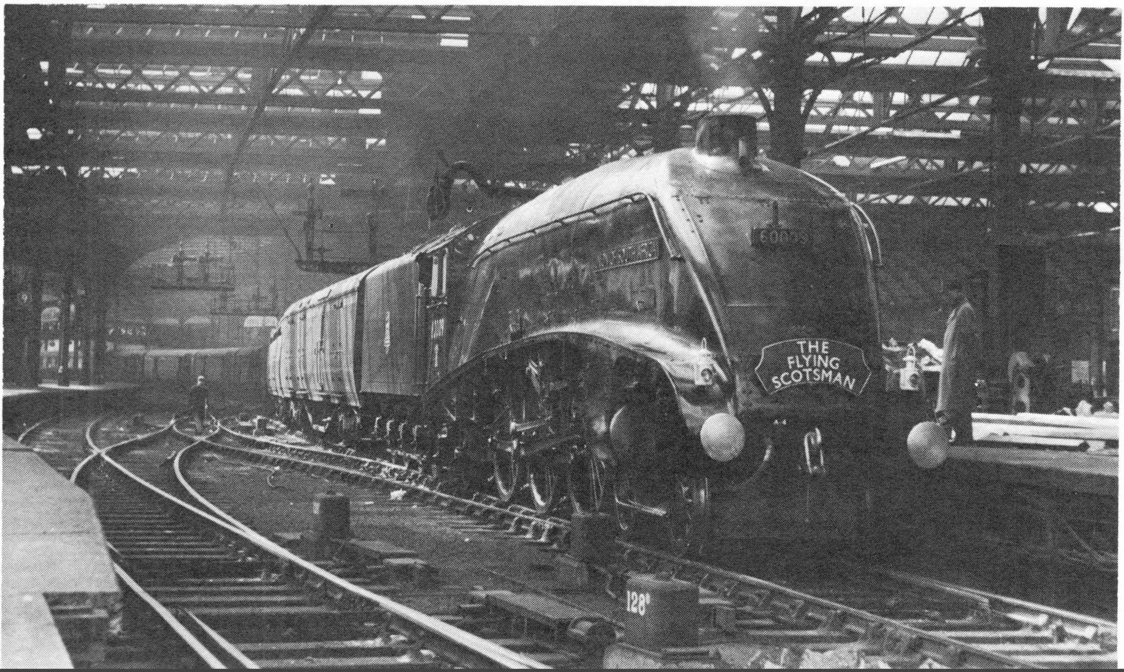
*Freight trains by-pass the platforms at Central by taking the goods lines round the back of the station. Worsdell NER class J27 0-6-0 No 65812 pounds round the curve with an eastbound freight (*right*) on February 10 1964.*/B. J. Ashworth

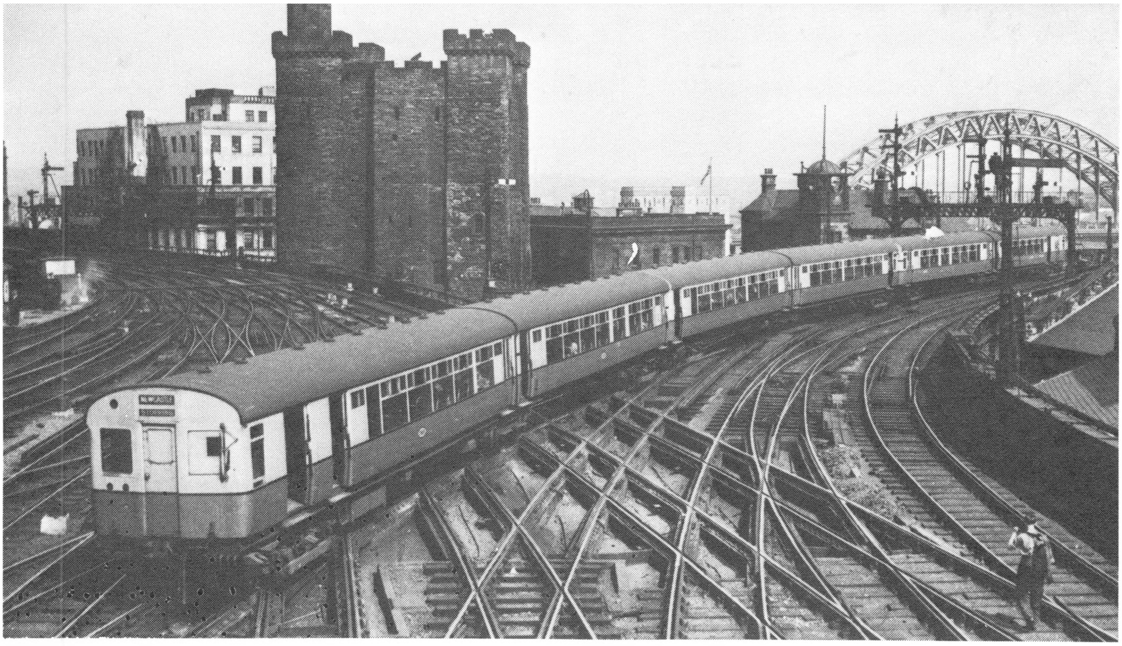
*Boat train: Gresley class V3 2-6-2T No 67690 accelerates away from Newcastle on June 2 1962 (*below*), having taken over the 9.05 Kings Cross-Tyne Commission Quay for the last stage of its journey.*/M. Mensing





62024


THE FLYING SCOTSMAN
128



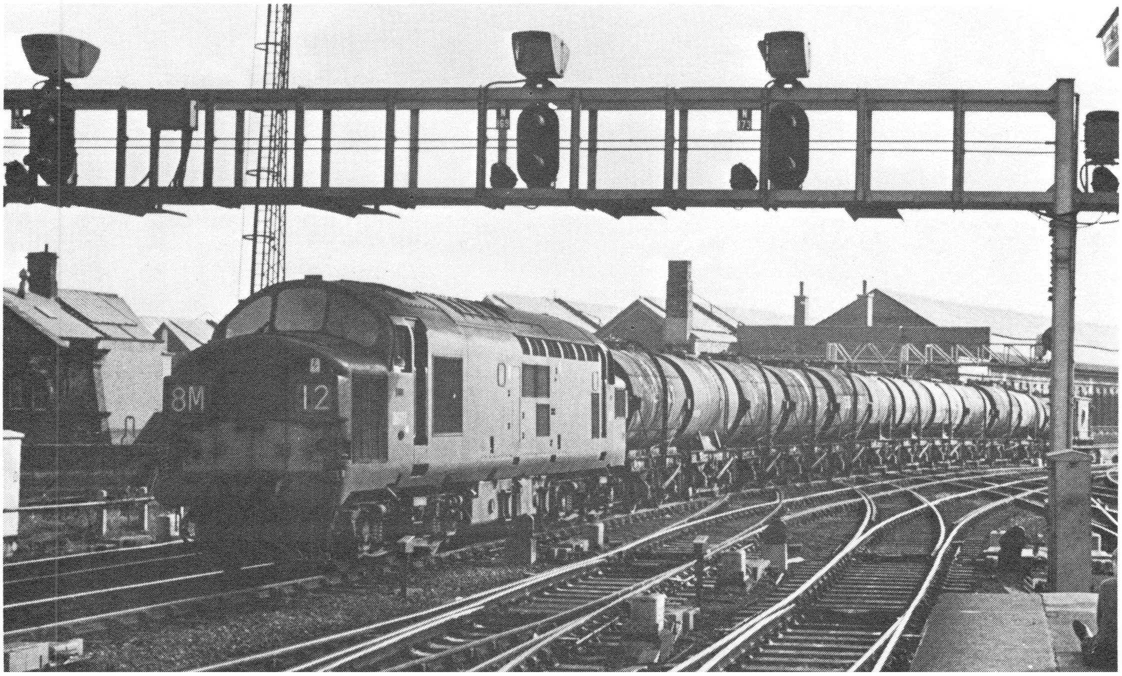
*The NER electrified its North Tyneside suburban lines in the first years of the century, and the system was extended to include the South Tyneside line to South Shields in 1938. New BR Standard rolling stock was provided in 1955, but the South Tyneside lines were de-electrified in 1963, and the North Tyneside lines a few years later. Although there was then a suitably cold and bleak view ahead as the 14.53 Newcastle-South Shields electric approached Park Lane Junction, Gateshead on December 30 1962 (*above left*), major parts of both the North and South Tyneside systems are now being re-electrified as part of the Tyne and Wear Metro project.*/I. S. Carr

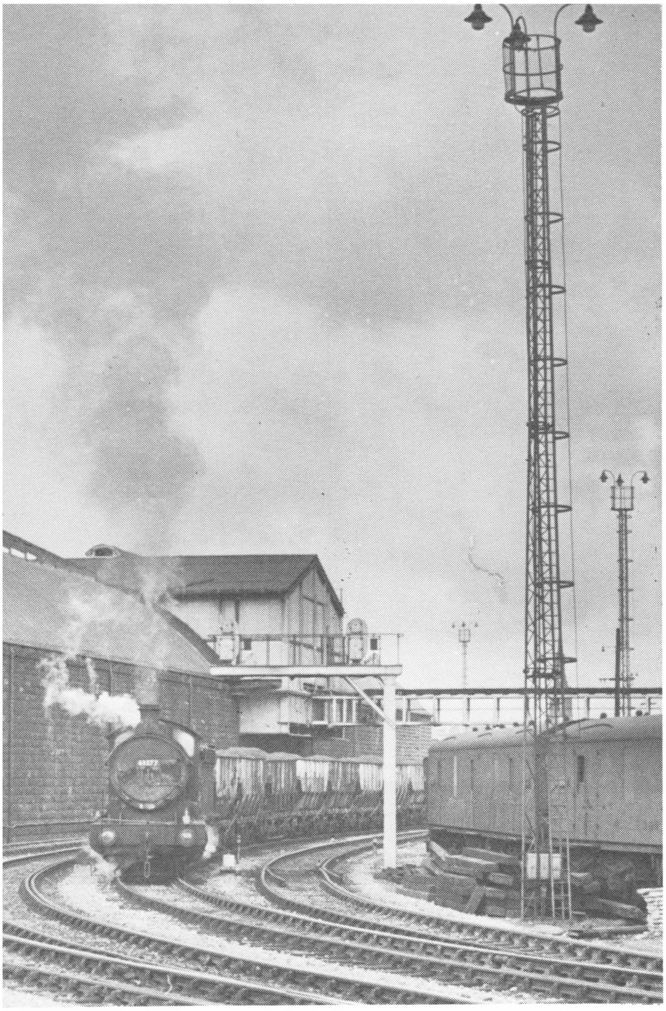
*Its headlamps indicating that it is on its way to, rather than from, a mishap, class K1 2-6-0 No 62024 takes the avoiding line at Newcastle (*centre left*) as it heads west with the breakdown train on May 21 1962.*/M. Mensing

*Although probably the most well-known, 'The Flying Scotsman' is but one of the many named trains which have passed through Newcastle over the years. As usual the charge of a Gresley streamlined A4 class Pacific, the down 'Scotsman' pauses at Central in early BR days (*below left*) with No 60009* Union of South Africa *at its head.*/Eric Treacy

*Approaching Newcastle from the High Level Bridge and negotiating the famous diamond crossings at the east end of the station on a South Tyneside working in July 1948 (*above*) are three of the twin articulated electric units built by the LNER in 1938 for the North Tyneside services and only rarely seen south of the river.*/British Rail

*Off the Hexham line and on to the goods avoiding line growls English Electric class 37 Co-Co No D6777 (*below*) with an eastbound oil train on August 25 1966.*/John H. Bird

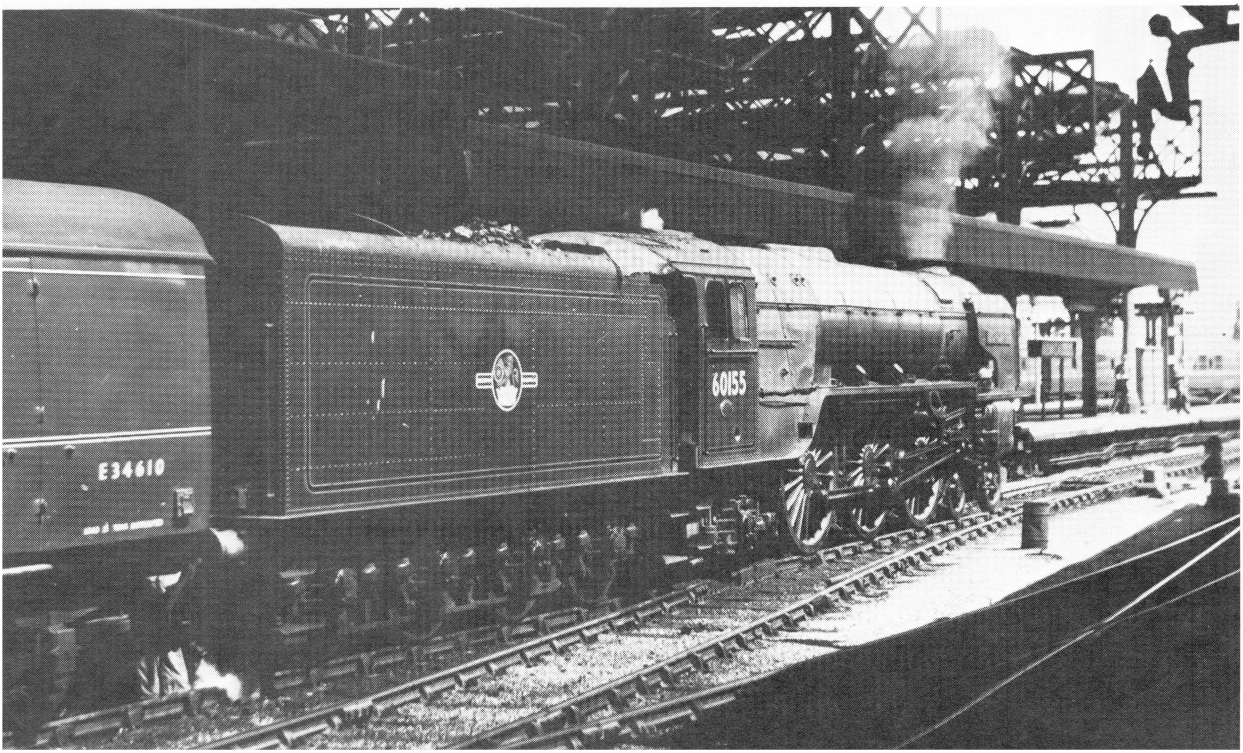




Left: *Grubby Raven class Q6 0-8-0 No 63377 gets a clear road on the avoiding line as it slogs west with a heavy coal train on August 25 1966.*/John H. Bird

Below: *With just a wisp of steam from the safety valves, A1 class Pacific No 60155* Borderer *awaits departure for the North with the 10.25 Scarborough-Glasgow train on July 25 1964.*/M. Dunnett

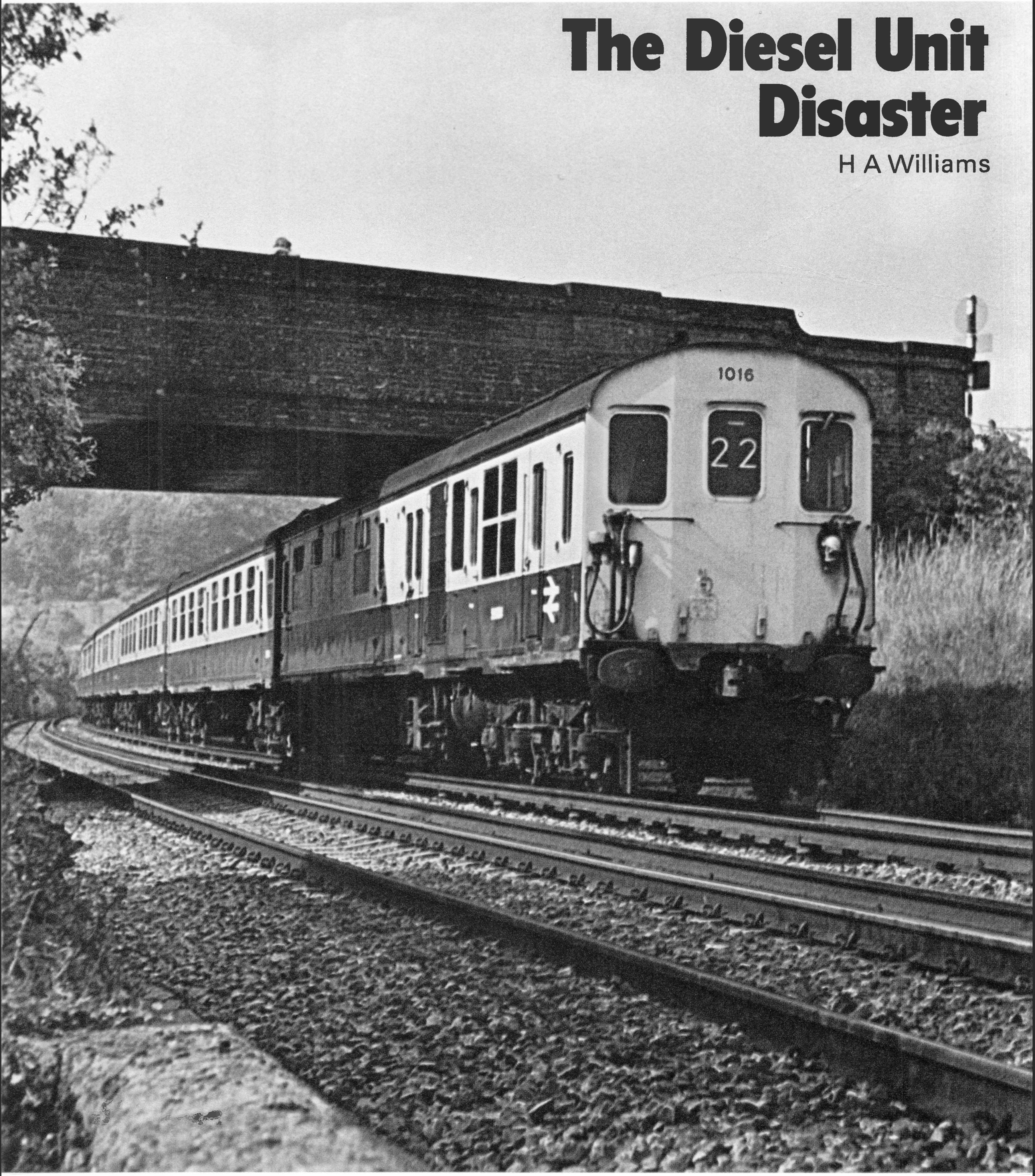
Right: *Away from Newcastle Central across the diamond crossings at the east end of the station comes Class 55 Deltic Co-Co No 55022* Royal Scots Grey *with the 08.00 Kings Cross-Edinburgh on August 27 1976.*/Barrie Watkins



GW

The Diesel Unit Disaster

H A Williams



Much criticism has been quite properly levelled at the British Transport Commission for its ill-advised and hasty dash into dieselisation under the 1955 Modernisation Plan, with series production of several locomotive types apparently ordered before proper evaluation of the prototypes was complete. But curiously, very little is heard of its equally headlong — and equally chaotic — excursion into the even less explored realm of the diesel multiple-unit.True, the first aluminium framed 'lightweight' twin diesel units had emerged from Derby Works in 1954, some months ahead of the Modernisation Plan, but its authors seized upon this new and still largely untried form of train, with its bus-like accommodation and diesel-mechanical power plant, with such enthusiasm that by 1960 BR had come from nowhere to first place in the World league for railways using this type of motive power.

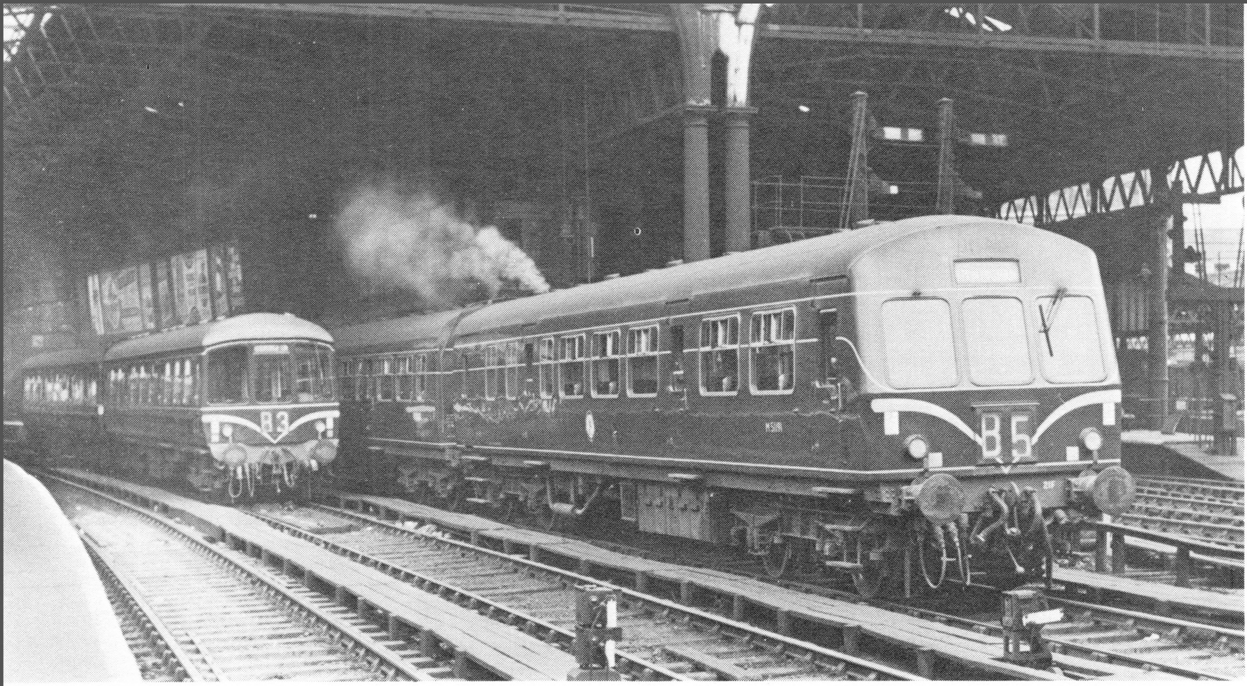
The persuasive arguments used in favour of the adoption of diesel multiple-units were their operational flexibility, low operating costs, ability to work branch lines all day single-handed, and potential for staff saving by conductor-guard operation. Close examination reveals these predictions to have been at best naive and at worst dishonest; operational flexibility turned out to be double-edged because the standardisation of accommodation made it difficult to cater for differing traffic flows without remarshalling or combining units, while their introduction on branch lines in many cases actually increased costs because very few lines enjoyed a level of service that required a day-long shuttle, and whilst in steam days the branch locomotive could work freight trips between passenger turns, the diesel units merely stood with engines idling while another locomotive was used for freight traffic. The potential for savings through the adoption of conductor-guard operation and unstaffed stations proved much more difficult to realise than had been envisaged, largely due to union resistance, and it is fair to add that the design of some units was (and still is) quite unsuited to this type of operation.

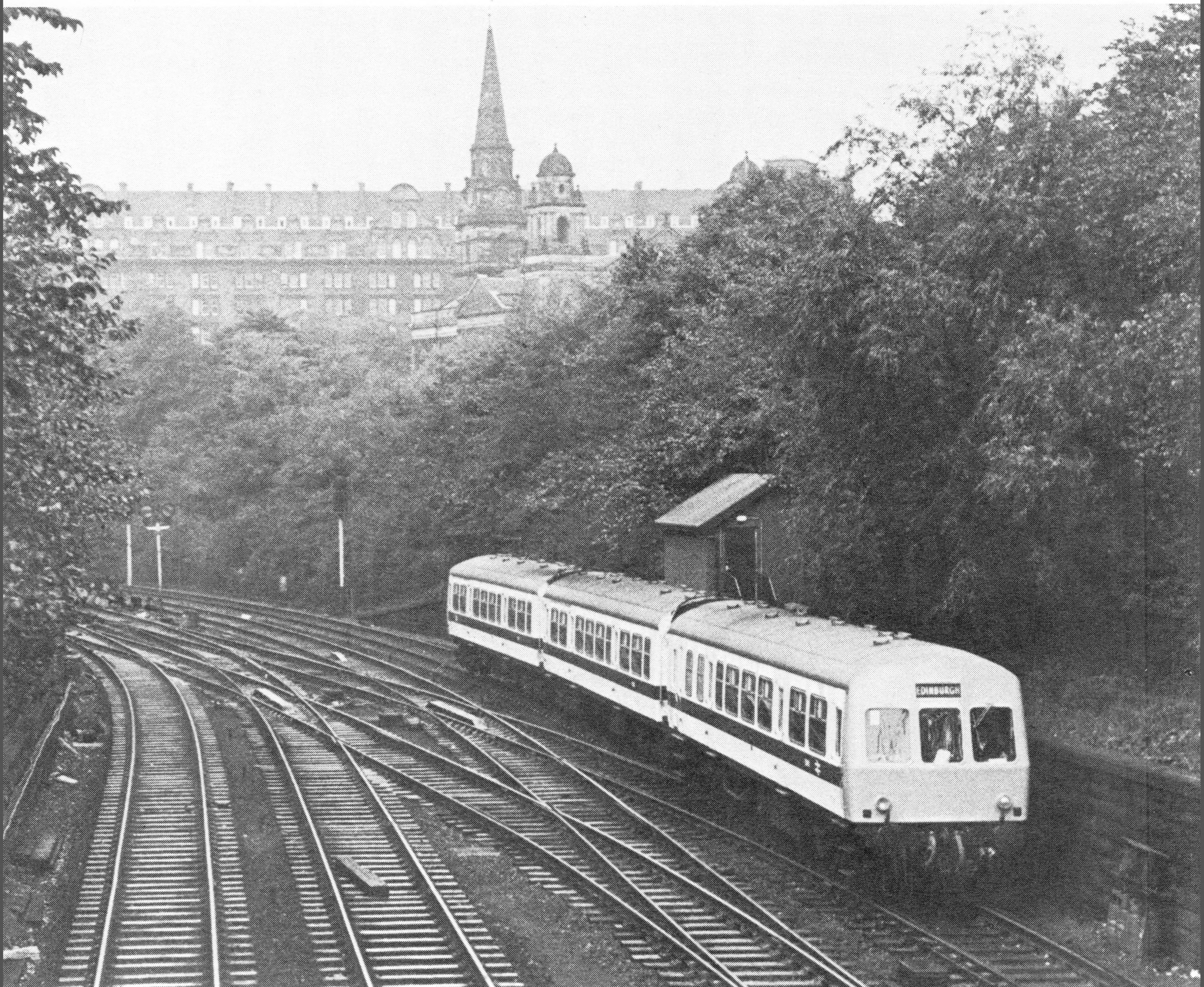
When first introduced, the Southern Region's Hastings line diesel units were heralded as Britain's ugliest diesels. Yellow ends and Inter-City livery have slightly enhanced their looks, but it is performance and reliability in traffic that count, and although the Southern have been criticised for producing a conservative and unimaginative design, even allowing for the severe loading gauge restrictions of the Hastings line, there can be little doubt that the Southern engineers were right to opt for the heavier but more reliable diesel-electric power units for the intensive Hastings line services. Here class 202 longframe unit No 1016 nears Polhill on the 15.40 Charing Cross-Hastings working on July 20 1974./M. L. Williams

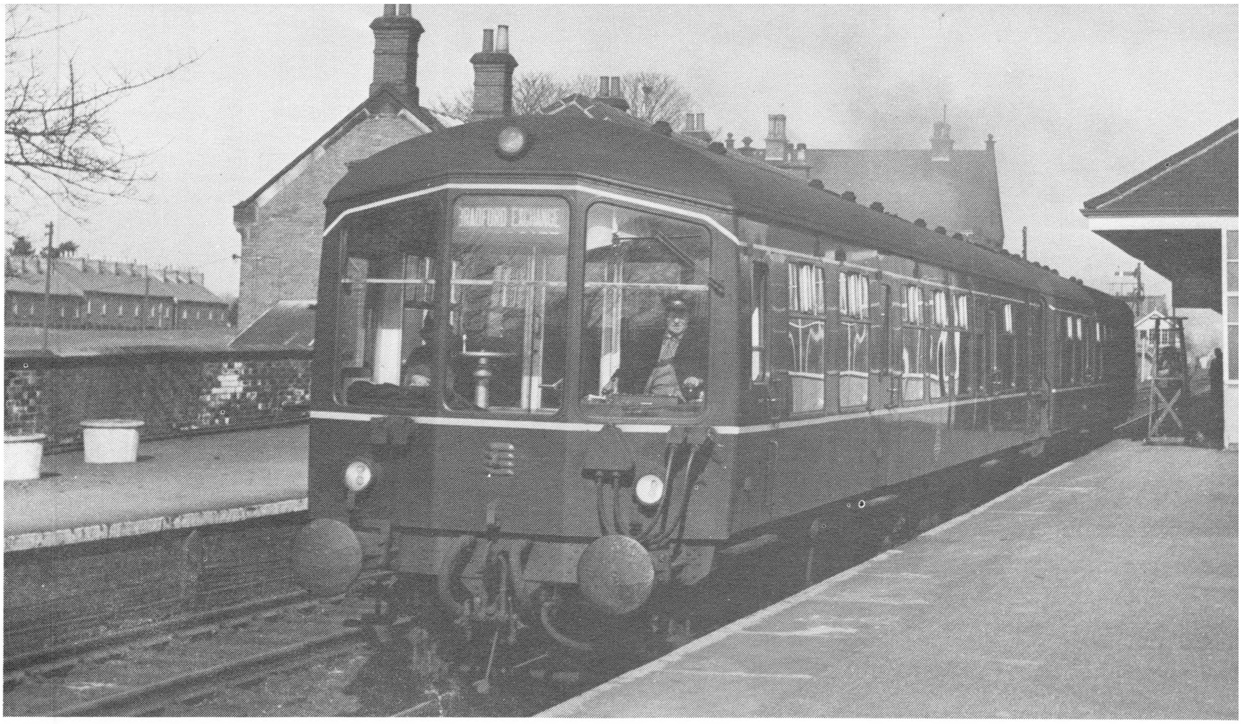
But perhaps the biggest disappointment of the diesel multiple unit programme was its lack of standardisation and high failure rate, which sent operating costs soaring and punctuality records diving. I recall a Yorkshire Yardmaster gloomily surveying his yard full of stopped units on a summer Saturday remarking "Aye, we've got two types of unit here — failures and complete failures!"

The reasons for this less than perfect transition to the diesel multiple-unit era were not hard to detect; in its haste to get as many units into traffic in as short a time as possible, the BTC repeated its locomotive-ordering gaffe and put out pilot orders to a wide range of private carriage-building firms. Allowing them a high degree of design freedom, the BTC's only apparent provisos were that the control systems should be compatible, that the doors should be standard, and that the braking and gangway equipment should be universal. And the decisions on these last two items in themselves demonstrated confused thinking — probably as a result of undue pressure on BTC headquarters from the insular Regional Barons. Despite the demonstrably greater efficiency of the air brake, and its widespread and effective use in electric multiple-unit stock, it was decreed that diesel multiple-units should be vacuum-braked. Likewise, although the buckeye coupling and Pullman Gangway used by the SR and LNER had been adopted for all BR Standard locomotive hauled stock, for some reason the specification for the new diesel units reverted to screw couplings and the GWR/LMS-type flexible gangway. An ideal opportunity for a fresh start was missed, and it was another ten years before the BTC's successors finally capitulated to the inevitable.

As a result of all this muddled activity, it was not long before a whole series of new designs of multiple-unit, none of them to any recognisable new standard, began rolling out of the Works of Metropolitan-Cammell, Cravens, Wickham, Birmingham RC&WCo, and Gloucester RC&WCo, as well as the railway workshops at Derby, Swindon and Eastleigh. Almost every design had a different front end, and its own unique window arrangement and seating layout. Worse still, some units from the same manufacturers differed quite considerably between batches. Most were fitted with two BUT (AEC) six-cylinder horizontal engines, of either 150 or, later, 230bhp, but a few had Rolls-Royce 180bhp engines. Most had mechanical transmission (indicated in later years by a blue square painted above each buffer and on jumper cable sockets) but the early Derby lightweight and Metropolitan-Cammell units, although also using mechanical transmission, had differing control circuits, and were unable to work with 'blue square' units, so they carried a yellow diamond code. This


B3
B5


EDINBURGH



*Until electrification as part of the West Coast Main Line scheme in the mid-60s, Birmingham was Britain's largest city without any form of electrified suburban railway, so it was perhaps natural that the introduction of diesel multiple-units under the Modernisation Plan had a great impact on the pattern and quality of services in the area. Leaving the old New Street station (*above left*) as empty stock after arrival from Redditch on July 8 1961 is a Metropolitan-Cammell twin unit, while on the left a Park Royal twin unit stands empty on the centre road./*M. Mensing

*The Metropolitan-Cammell units were produced in two-, three- and four-car sets, some with miniature buffets, and have seen regular service on all Regions apart from the Southern. They figure largely in the current diesel unit refurbishment scheme, and it is in the distinctive new white and blue PTE livery that a refurbished three-car unit threads Princes Street Gardens (*below left*) on October 20 1975 on the last stages of a Dundee-Edinburgh working./*G. A. Watt

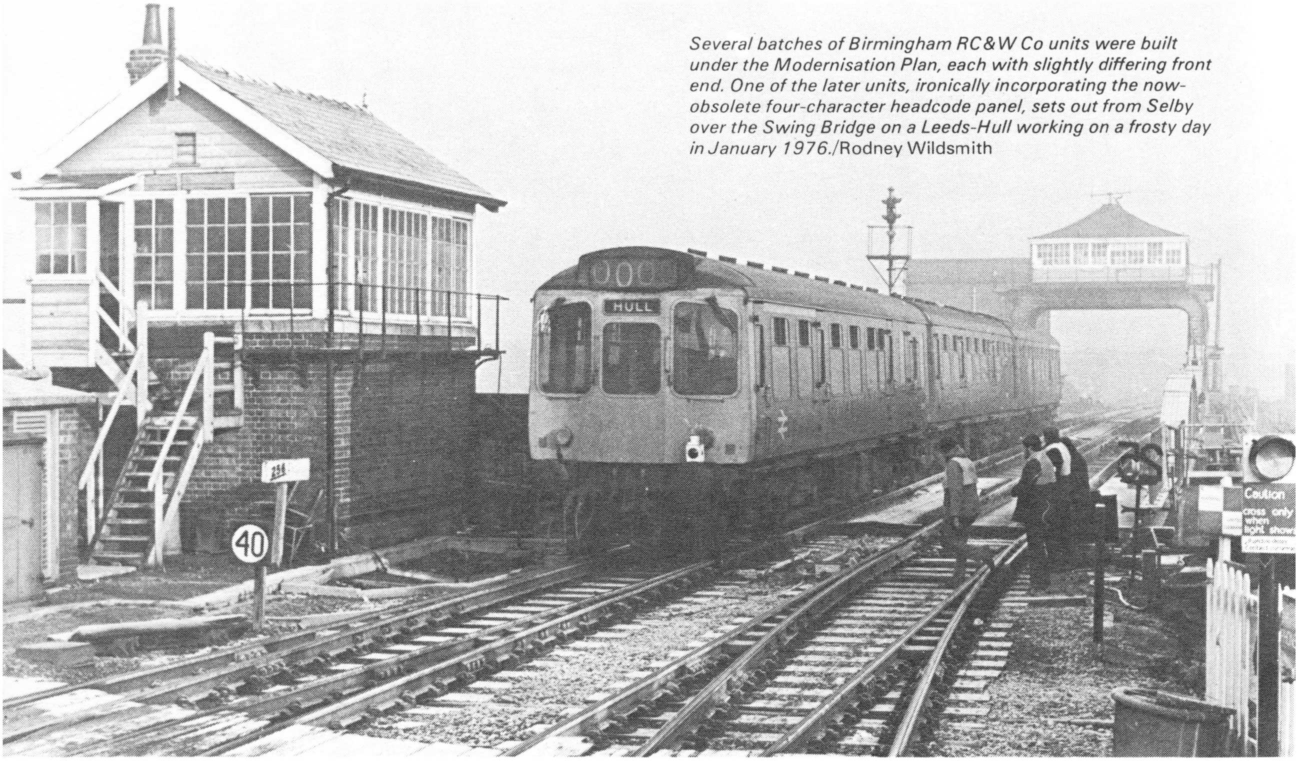
*The Derby lightweight diesel units, although seen by many as the first tangible results of the Modernisation Plan, were in fact ordered and delivered before the Plan was announced. West Riding local services based on Leeds and Bradford were among the first to receive the new units, and this mid-50s view (*above*) of a twin unit leaving Ripon for Leeds and Bradford on the now-closed line from Northallerton to Harrogate shows the panoramic windows of the front end — unsurpassed by many subsequent designs — to advantage./*Eric Treacy

restriction was also true of some early Inter-City units, identified by a white circle, and of a batch of Derby suburban units, for the Eastern Region, which were equipped with hydraulic transmission, and carry an orange star coupling code.

As the types and numbers of units in service multiplied, so it became obvious, just as with the various diesel locomotive types, that some designs were decidedly more successful than others. Some proved to be reasonably reliable, others were reliable but for one or two particular faults which could, with varying degrees of efficiency, be rectified, and yet others were, to put it mildly, something of an embarrassment. Since, for obvious logistical reasons, units of the same type tended to be allocated to areas in batches, the result was a very patchy performance record.

Generally speaking, the introduction of diesel multiple-units was not given an unqualified welcome by passengers. Even though they often brought a greater frequency of service, the bus-like seats and layout of most units was inferior to the accommodation provided in the usually-longer locomotive-hauled trains they replaced. As a result, there were complaints of overcrowding, excessive vibration and noise, and there is no doubt that the heating and ventilation systems on the early units left much to be desired — one had the doubtful choice of freezing or breathing an unhealthy fug liberally laden with diesel fumes.

Although every type was different, the units produced between 1955 and 1960 could be divided



Several batches of Birmingham RC&W Co units were built under the Modernisation Plan, each with slightly differing front end. One of the later units, ironically incorporating the now-obsolete four-character headcode panel, sets out from Selby over the Swing Bridge on a Leeds-Hull working on a frosty day in January 1976./Rodney Wildsmith

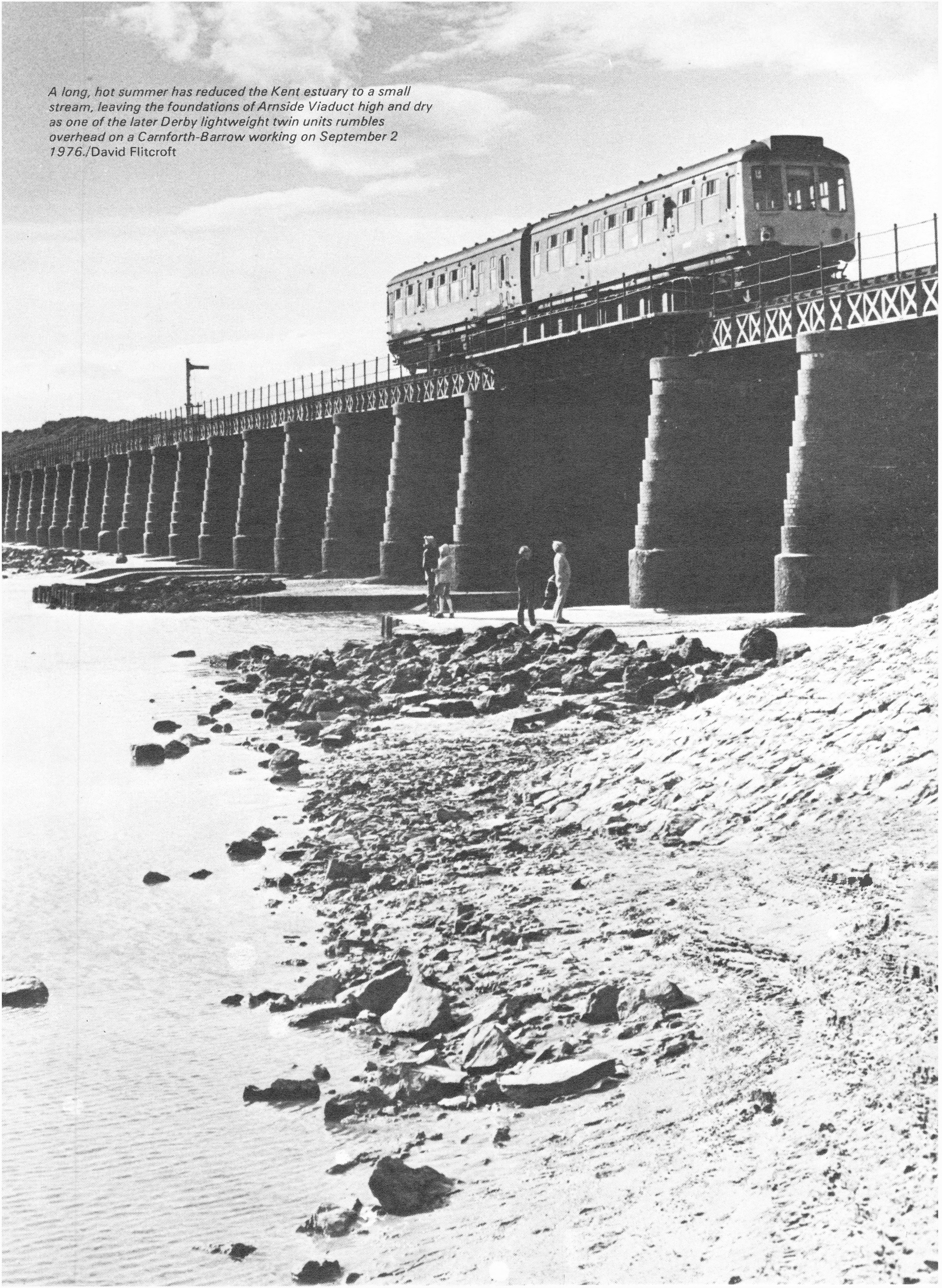
into five main groups — suburban, cross-country, inter-city, Pullman and southern.

The suburban units, built mainly for the Western and London Midland Regions, were virtually dieselised versions of BR Standard suburban stock, with doors to each seating bay and no lavatories or gangways. The 'cross country' group included the largest number of types, especially from the private builders, and therefore exhibited the greatest variation in design. Generally, however, they all had first and second class accommodation in open saloons, access being gained via doors in separate transverse vestibules, lavatories and gangways within the units, and some had buffets. Inter-city Units were similar but generally heavier, on longer, BR standard underframes, with buck-eye couplings and some side-corridor compartment accommodation; some units were gangwayed throughout.

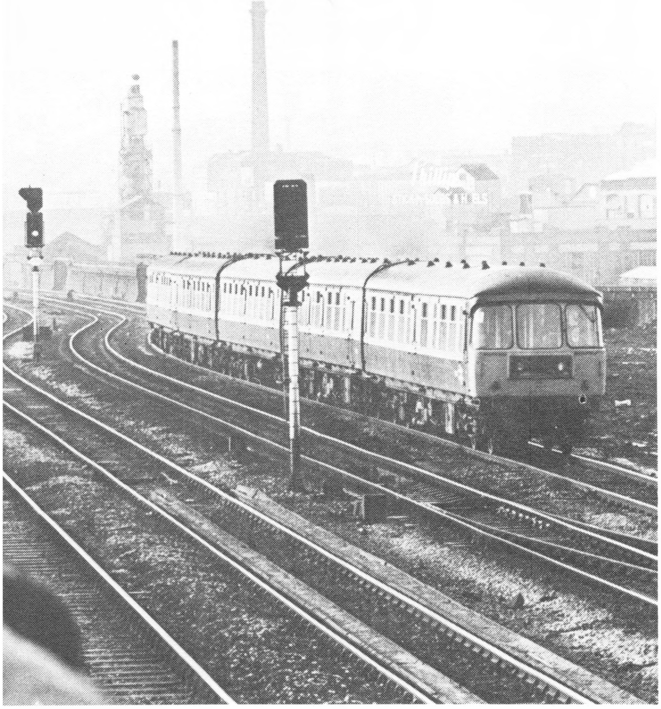
Introduced in 1959, the Diesel Pullman units were in a category of their own. There were two six-car and three eight-car units, all designed and built by Metropolitan-Cammell. Each unit had a 1,000 bhp diesel-electric motor coach at each end; the two six-car units were first class only and used on the Midland line St Pancras-Manchester 'Midland Pullman' service until the electric Pullmans were introduced on the electrified ex-LNWR route in 1966, when they were transferred to the Western Region to join their three eight-car sisters on the Paddington-Bristol and South Wales lines. Although withdrawn in 1973 to make way for newer, locomotive hauled air-conditioned Mark II stock, the Pullmans were among the more successful of the diesel-unit ventures, and could be said in some ways to have been the forerunners of the HST units.

The only other major group of diesel-unit is that operated by the Southern Region. Being the bastion of the built-to-last, all-steel electric unit, the Southern was somewhat contemptuous of the lightweight bus-engined, aluminium bodied horrors let loose on the other Regions. Waterloo was determined that if it was going to have diesel units at all at least they were going to be proper trains, built to electric unit standards and, sensibly, with as much equipment as possible compatible with the straight electric units. So it was in 1957 that Eastleigh turned out the first narrow-bodied all-steel six car diesel-electric units for the heavily restricted Hastings Line, closely followed by the first of a series of two-car 'Hampshire' units, based very closely on the then recently-introduced 2-HAP electric units. Indeed, the driving trailer was virtually identical to its electric counterpart, but the motor coach had a large engine compartment in place of three of the seating bays in the HAP coach.

Both the Hastings and the Hampshire units relied heavily on current SR electric unit practice, and their

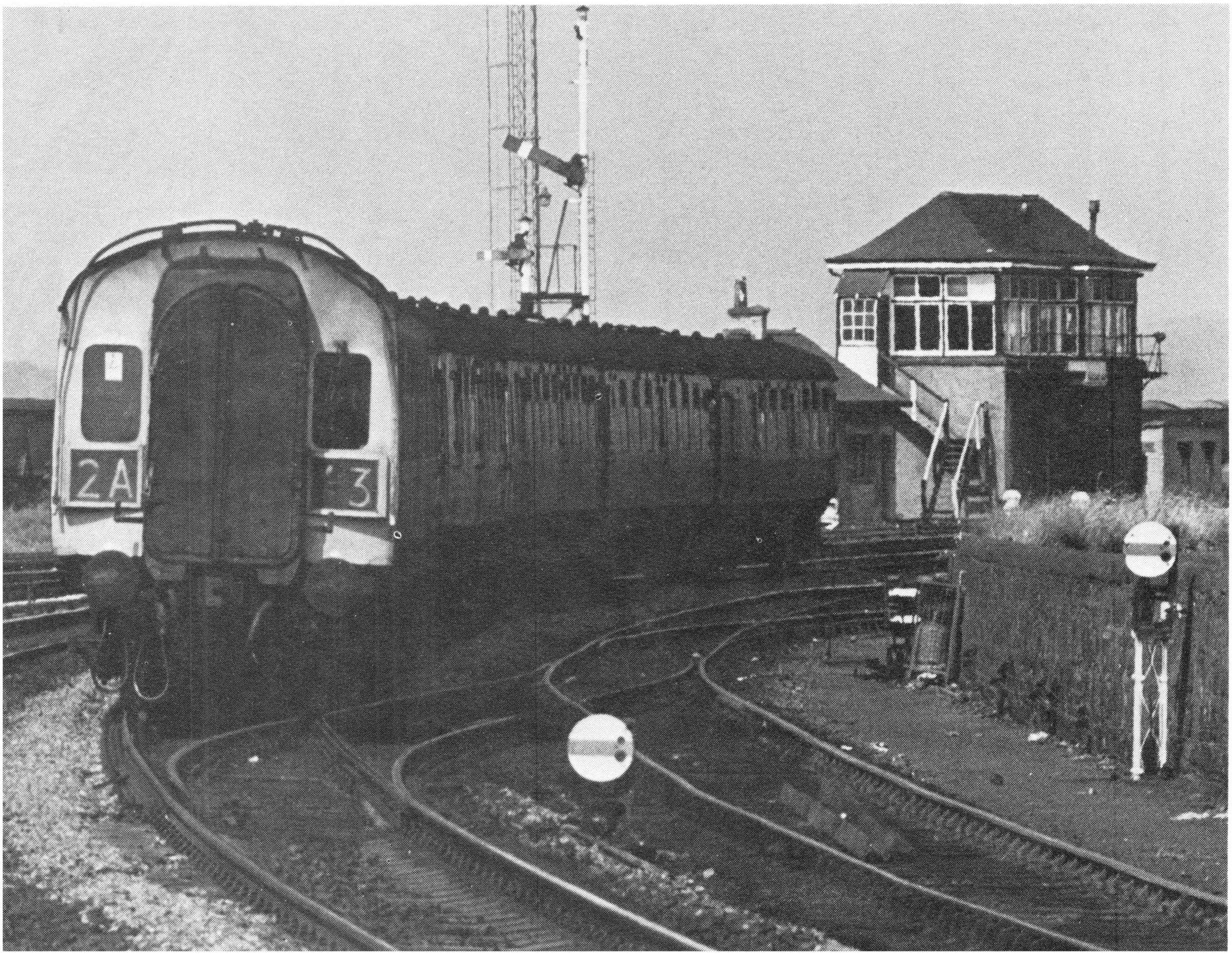


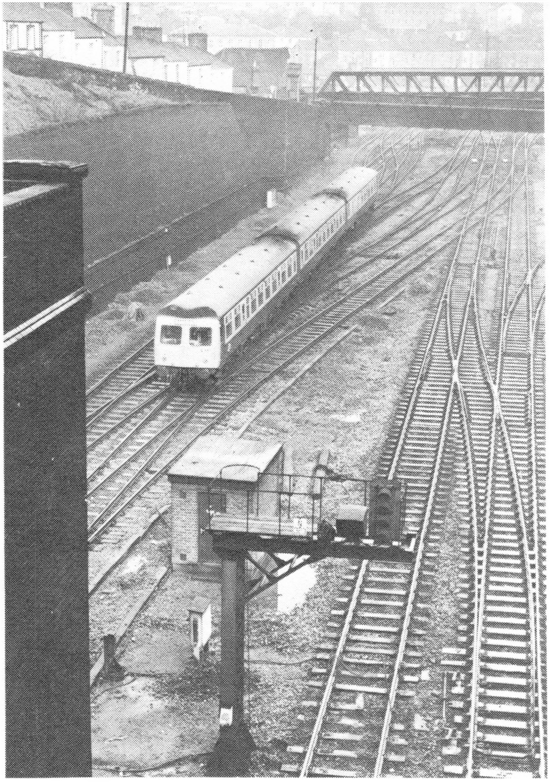
A long, hot summer has reduced the Kent estuary to a small stream, leaving the foundations of Arnside Viaduct high and dry as one of the later Derby lightweight twin units rumbles overhead on a Carnforth-Barrow working on September 2 1976./David Flitcroft



*By the time anything approaching a standard front end design had been evolved, most of the diesel unit fleet was already under construction or complete, but Swindon Works managed to incorporate the new glass fibre front end, first seen on the Glasgow suburban electric units, on both the six-car inter-city units built in 1960 for the Trans-Pennine Liverpool-Manchester-Leeds-Hull service and, with the addition of a gangway, on the units built in 1963 for Western Region Inter-City services. Marred only by the clumsy addition of the four-character headcode panel, and now formed of only five cars following withdrawal of the buffet vehicles, a Trans-Pennine unit climbs away from Manchester (*left*) on the 12.10 Liverpool-York on December 31 1976.*/David Flitcroft

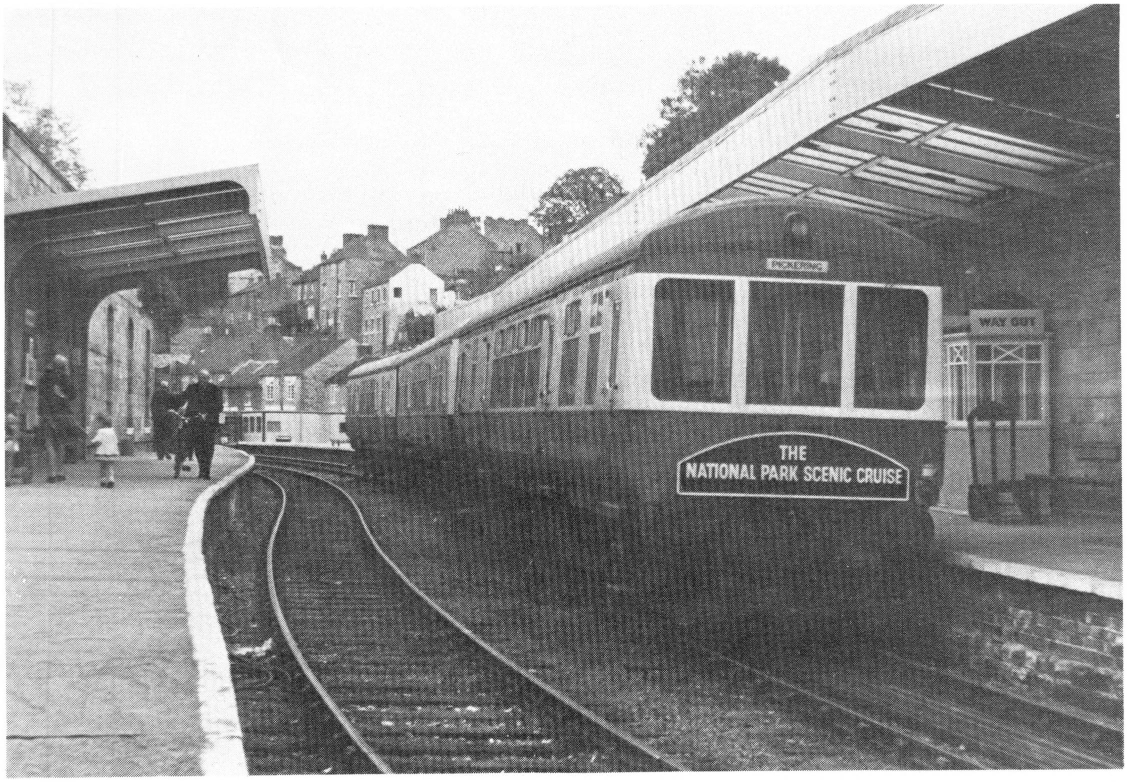
*Just how much of an improvement the later Swindon designs were over their first efforts is amply illustrated by this head-end view (*below*) of one of the earlier inter-city units built for the Scottish Region entering Newton-on-Ayr on the 13.35 Glasgow-Ayr on August 14 1976. The front end was virtually nothing more than two windows cut into a standard coach end, rather like the Southern diesel electric units. Note the use of Pullman-type gangways and buck-eye couplings, but round instead of the usual oval buffers.*/D. G. Cameron

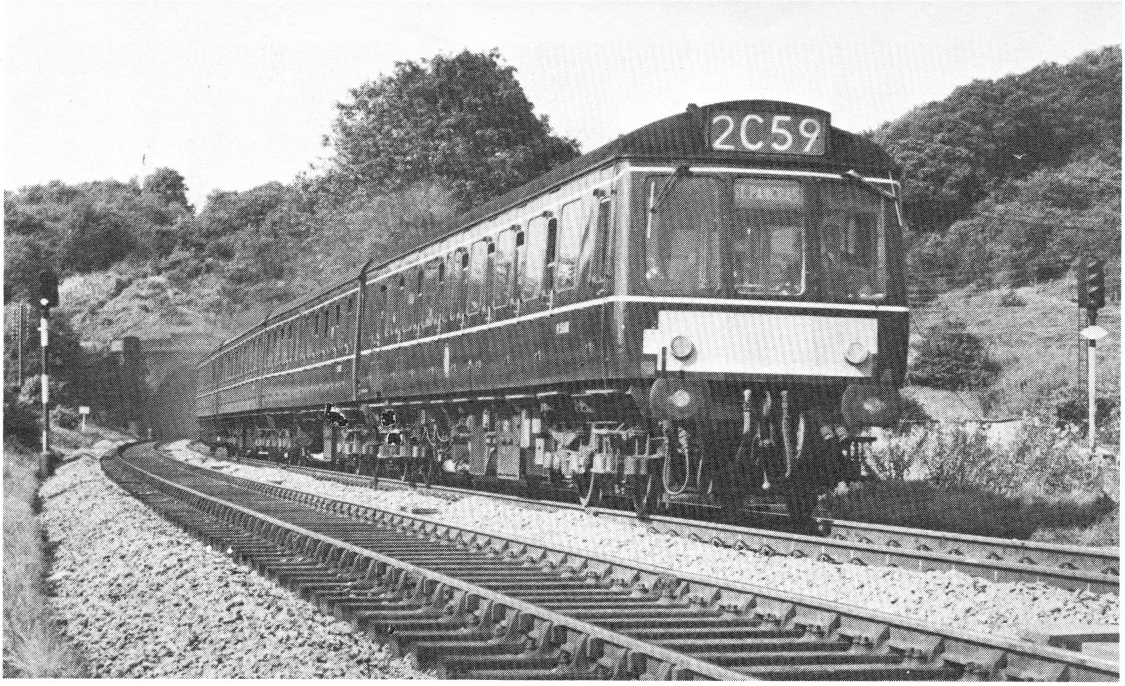




*In addition to inter-city units, Swindon also built several batches of cross-country units, for use on the Scottish and London Midland Regions as well as the Western Region itself. All have the distinctive two-window front end seen on one of the Western Region examples as it sets out from Newport (*right*) with the 12.16 to Swansea on February 20 1977.*/L. A. Nixon

*Not all the diesel units rendered redundant by line closures and service cuts have been cut up; some have been sold for further service abroad, while others are in use on preserved railways. This Gloucester RC&WCo set at Pickering (*below*) suitably repainted, now works 'The National Park Scenic Cruise' to Goathland on the North Yorkshire Moors Railway.*/Rev. Graham Wise





In contrast to the varied designs of front end used for the cross-country and inter-city units, all the suburban diesel units, including those built by Birmingham, Gloucester and Pressed Steel, used the same Derby-type front end. One of the Derby-built diesel-hydraulic four-car units for St Pancras suburban services leaves Elstree Tunnel on the 13.45 Bedford-St Pancras on September 14 1963./Brian Stephenson

motor bogies were interchangeable with those used on the electric units. The only snag was that the motor coaches were virtually miniature locomotives, weighing over 55 tons apiece, and did not therefore do much to improve the condition of the track on either the Hastings line or some of the ex-LSWR branches in Hampshire on which they were originally introduced!

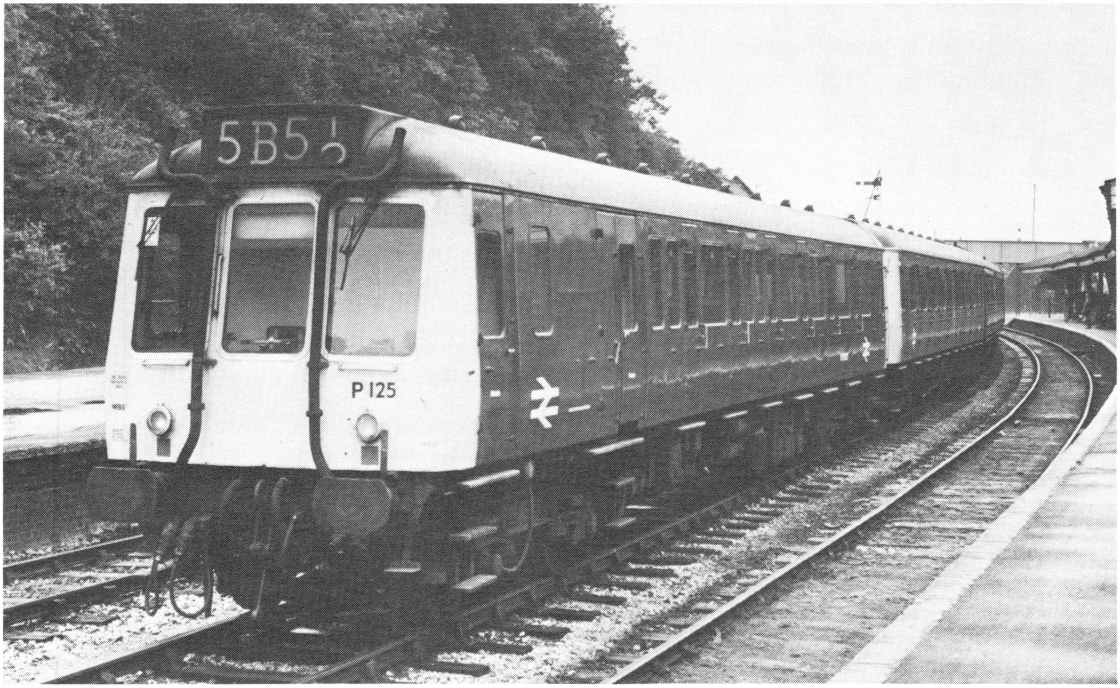
By 1963 construction of diesel-units had tailed off; most of the major replacement programmes were nearing completion and diesel units were entrenched on the suburban lines out of Paddington, Marylebone and St Pancras, in the South Wales Valleys and on the ex-GW branches in Devon and Cornwall. From Birmingham north to Preston, Manchester and Leeds, as well as in East Anglia, the north east and on the Scottish suburban services, diesel-units were much in evidence. On Tyneside they had even begun to replace the suburban electric trains.

Regional preferences and parochialisms became obvious; the Western Region used vast numbers of second class-only suburban units, even on rural branches, while outside London, the London Midland and Eastern Regions seemed to prefer the 'cross-country' type of unit. Some special units were built, notably the Swindon six-car 'Trans Pennine' Inter-City buffet units for the Hull-Leeds-Manchester-Liverpool service and the later four-car units for Western Region Inter-City services. These were the only two types of diesel unit to incorporate the proposed 'standard' glass fibre front end simply because new construction came to an end.

By this time many of the bugs had been ironed out of the earlier units, maintenance standards had improved, and staff had learned to live with the idiosyncracies of the less reliable units. Then along came Dr. Beeching, and over the next few years, many of the services for which the diesel units had been specifically built quite simply disappeared. Services on many lines in the South Wales Valleys were axed completely and branches from Devon and Cornwall across to East Anglia and up to Scotland seemed to disappear at almost weekly intervals. Some units were redeployed to other services — with varying degrees of success — but others, especially the earlier, less reliable or non-standard types, made an early journey to the breakers.

By the early 1970s, the fleet was considerably reduced in numbers and, by a process of selective withdrawal, somewhat more 'standardised,' although even to-day there are still many types of unit around.

Among the casualties of Beeching's branch line blitz were the early single-unit railcars, and especially the little four-wheel railbuses specifically designed for rural branch line operation. Based closely on the Deutsche Bundesbahn four-wheeled railbuses, the British versions came from a variety of manufacturers and performed with an equally variable degree of



For light branch line work, and to augment existing three-car suburban units, Gloucester RC&WCo and Pressed Steel between them built 35 single-unit railcars. Basically double-ended motor brake seconds, some have since been converted for parcels traffic, or relegated to Departmental use, but this Pressed Steel example, in tandem with a three-car unit, is waiting at Barnstaple to return to Exeter on a passenger working on July 13 1976./Brian Morrison

reliability. Because they are quite unsuited to any other type of work, they tended to disappear as the branches they worked closed, but no less than six have been saved from the scrapheap by various Preservation Societies for the very same reasons as they were introduced by BR — simple and cheap to operate and, being lightweight, very kind to the track. Some of the bogie single-unit railcars displaced by branch closures have found further use on main line suburban work, others have been converted to parcels units, and at least five are now allocated to various branches of the Engineering and Experimental sections.

What of the picture today? HST apart, no diesel multiple-units have been built now for over 15 years, and some of the earlier vehicles still in traffic are showing their age, both in terms of design and physical condition. Apart from 'cascading down' the first HSTs to humbler duties as later versions become available in the early 1980s, and a still-embryonic BRB plan for a new prototype diesel unit based on the 4PEP/Class 313 electric units, no replacements for the ageing dmu fleet are on the horizon. Nudged by the restive PTEs, BR has embarked on a long-term plan to systematically modernise and update the bulk of the present stock so as to keep it in traffic until the early 1980s. Within the restriction of price and the existing dated bodyshell the refurbished units offer more comfortable seating, greater insulation, better ventilation and lighting and a generally improved decor. Many previously non-gangwayed suburban units have been equipped with through corridor connections to facilitate conductor-guard or 'Paytrain' operation.

There is no doubt that the Southern's predeliction for initially more-expensive heavyweight diesel-electric units has paid off; apart from accident losses, the SR units alone have been untouched by withdrawals, and although their interiors are as conservatively unimaginative as their straight electric counterparts, they would appear physically to be capable of several more years in revenue service. Their markedly greater reliability and strength compared to their lighter diesel-mechanical sisters would not appear to have gone unnoticed by the BRB, and it seems almost certain that the new prototype unit will be diesel-electric.

So it would seem that, after two decades, the era of the diesel-unit is on the wane; the combination of branch closures and successive suburban electrification schemes has drastically reduced the numbers required, while it seems that the remaining cross-country and minor Inter-City services at present diesel-unit operated will increasingly be worked by displaced locomotive-hauled stock, possibly push-pull, and, later, by 'cascaded' HST units. It is quite possible that in another ten years the conventional dmu will have virtually disappeared from the British railway scene.

So You Want to Photograph Steam...?

David Eatwell

There can surely be few branches of photography outside true photo-journalism so fraught with difficulty and with such a high failure rate as that practised by the amateur steam railway photographer. After all, in the event of unsatisfactory results, the fashion man can re-book his model, or the traveller go back another day. But once a train has passed, it has quite possibly gone for ever, for steam-hauled trains these days are a rarely-repeated sight.

Due to the recent almost indecent rush to dieselise and/or electrify everything in sight, few countries have much main line steam left today. But the nostalgia lingers, and the occasional enthusiasts' special is run, particularly in Britain, whilst business seems to be positively booming on the preserved lines. Abroad, what steam is left is disappearing fast, but where pockets of it still persist, the steam railway photographer is to be found, happily clicking away at all angles from the lineside, recording for posterity some splendid sights of smoke and steam. That is, of course, if all goes well.

But often, all does not go well. For example, every preserved locomotive must be subjected to (and pass) a most rigorous examination before being allowed to haul a train on British Rail, and occasionally one has been known to fail. It is far from amusing to have travelled all night, eventually found a suitable location by the line (having previously obtained a permit, of course), noted with satisfaction the sun coming out from between the clouds as the train is signalled, only to watch incredulously a few moments later as it roars past behind what appears to be an even uglier and noisier diesel than usual, instead of the expected 'steamer'. The feeling is quite indescribable!

Only other steam railway photographers will know what is involved in trying to obtain that elusive masterpiece, because only in the photographing of steam trains are so many unique qualities desirable. For example, the successful photographer must also be a rally-style driver (or at least think he is!) in order to overtake and ambush the train he is chasing — it's no use arriving one minute after the train has passed — as well as a superb map-reader and navigator so that he can quickly find his way down the roughest of cart tracks and through apparently impenetrable country to the railway. A co-pilot can be of some assistance, but the choice is fairly important; it certainly ought to be a fellow enthusiast, because spouses tend not to appreciate being informed in the vernacular that they have gone wrong!

The photographer also needs supreme powers of persuasion to get land-owners to allow him to cross their property, and be of an unusually generous nature to provide them with the prints that are usually requested as a 'toll'. Some knowledge of meteorology is also helpful in order to be able to allow for the speed and direction of clouds, and to avoid smoke from the locomotive being blown in the wrong direction at the wrong moment.

Getting to know the timings of special trains is becoming more and more difficult, but it can and must be done, for without timings, the task becomes totally impossible. Of course, scheduled timings are not always adhered to (Ha! Ha!), but a knowledge of what should be happening allows you, when it doesn't, to bring into action another most desirable quality — that of being able to make inspired guesses and improvise on the spur of the moment.

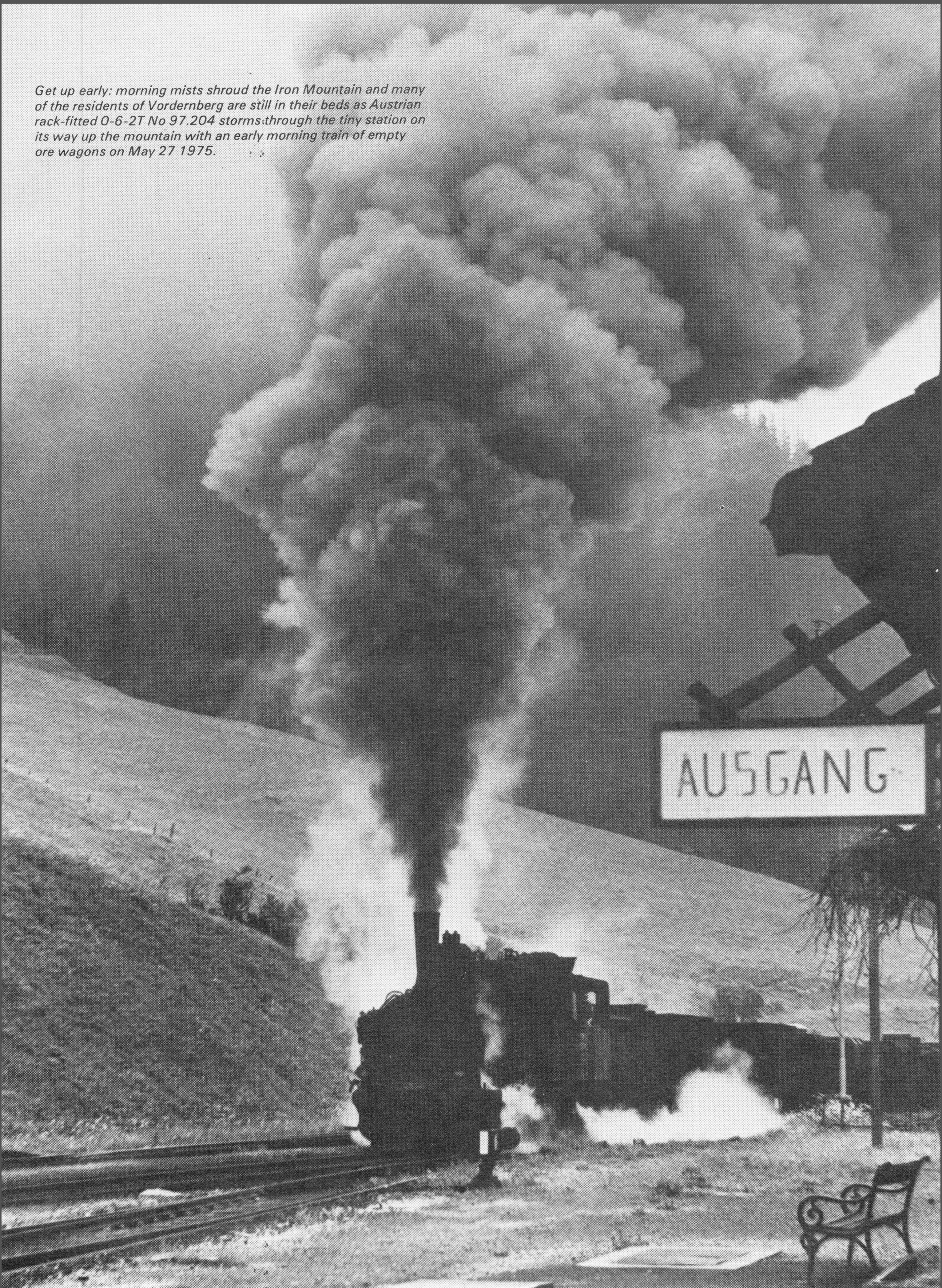
The steam railway photographer must have unlimited patience, for some trains never seem to come, and the ability to go for long periods without food or drink, and often without sleep either. Being able to perch in places that most birds find difficulty in reaching is an absolute necessity — but not please on signal gantries, telephone poles, tunnel mouths or bridge parapets. And he must be prepared to scramble away quickly once the train has passed and get back to the car to 'race' to the next pre-selected position.

Since it is the smoke effect that can make (or mar) a photograph, the steam railway photographer must know — or make an inspired guess — where this is likely to be at its best, and then be able to secure a view of the train uncluttered by others of similar intent.

A growing number of steam railway photographers are using more than one camera, perhaps a telephoto on a tripod, and a hand-held standard lens. Or perhaps even two standard lens cameras, one loaded with colour and the other with black and white film, but both linked for simultaneous exposure. The technique of using them calls for a fair degree of dexterity — especially when something untoward occurs, usually a tripod leg collapsing as the train comes into sight!

By far the most popular lineside camera is the

Get up early: morning mists shroud the Iron Mountain and many of the residents of Vordernberg are still in their beds as Austrian rack-fitted 0-6-2T No 97.204 storms through the tiny station on its way up the mountain with an early morning train of empty ore wagons on May 27 1975.



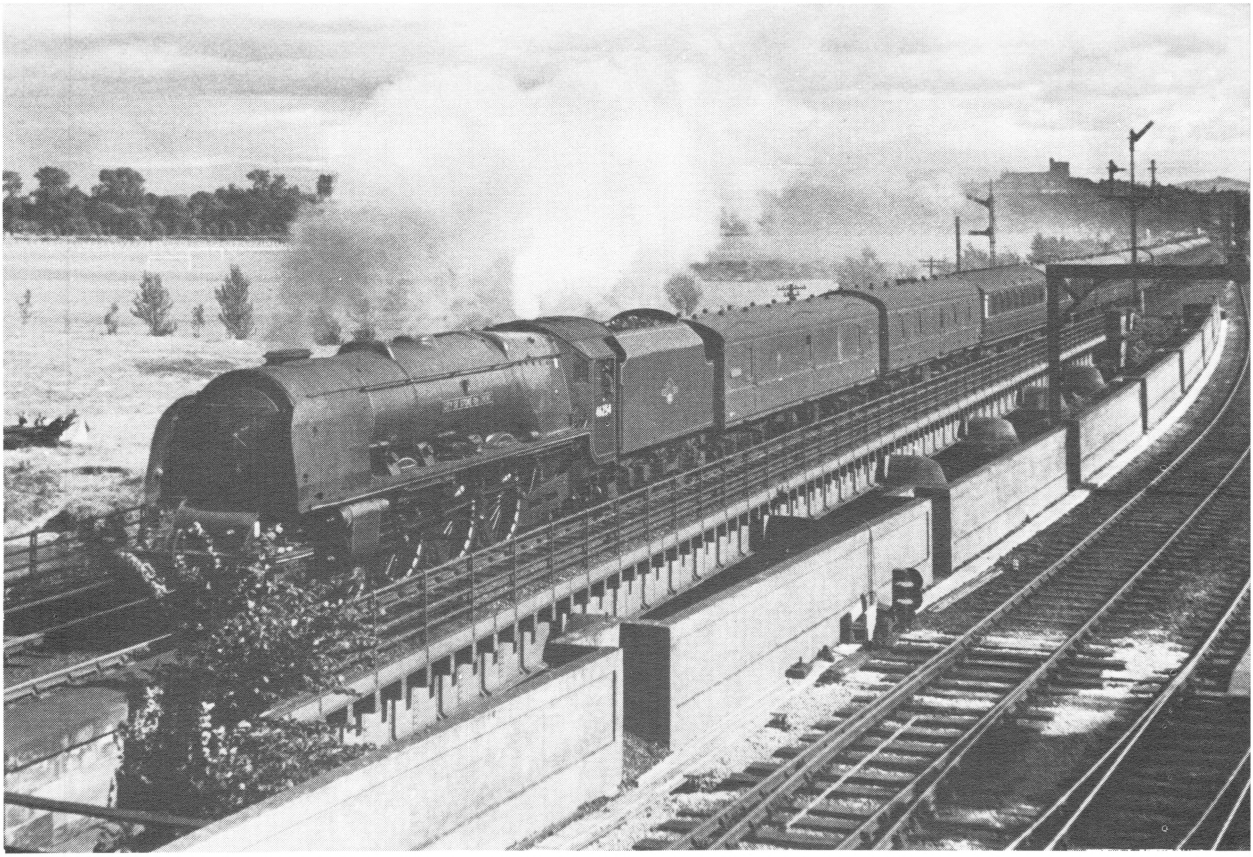
35mm single lens reflex (SLR), but some workers prefer the larger format of a twin lens reflex. Wherever there are cameras, there are camera users, so it is natural that when you are awaiting a train, a certain amount of badinage takes place. The uninitiated observer of steam railway photography might very well wonder what on earth everyone is talking about. Certain expressions could only be heard amongst a collection of steam railway photographers (which is probably just as well!) waiting to practise their 'art' (!), so the attached list of the more common varieties should be committed to memory at the outset.

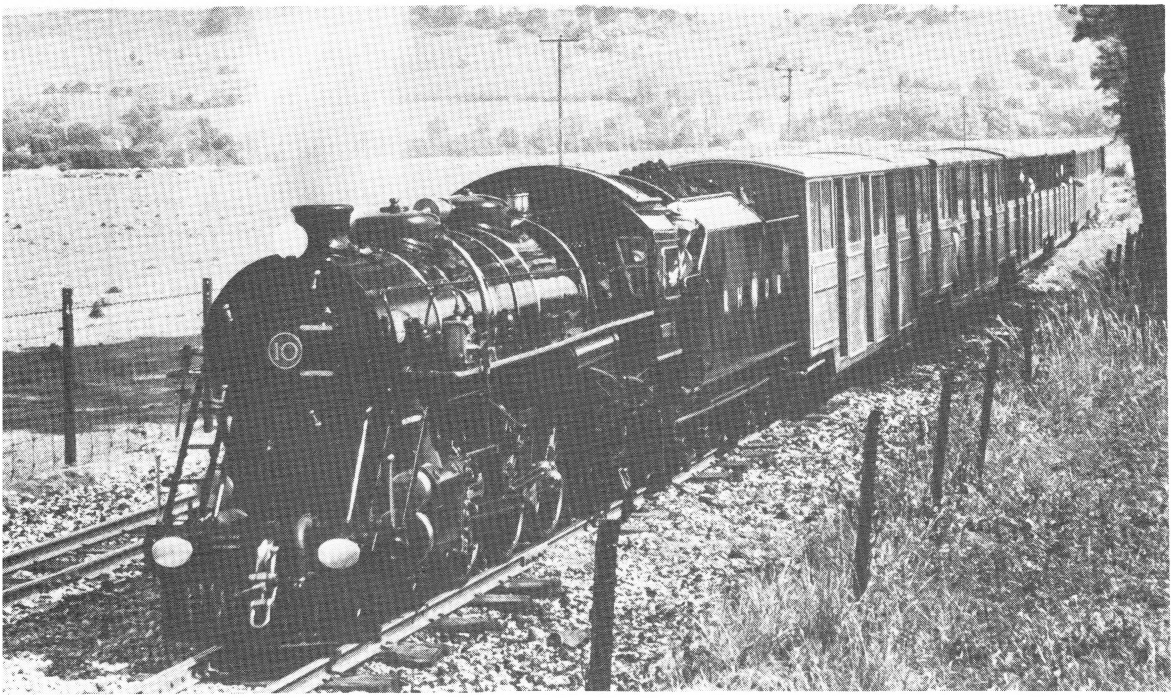
With the appearance of steam-hauled trains on the main lines now so infrequent, whenever they do appear, they must be photographed, irrespective of the weather, and (almost) the light. So above everything else, the steam railway photographer must have the fortitude (and the correct clothing) to withstand heavy rain, driving snow and thick fog, sometimes simultaneously, and the determination to catch his quarry with his cameras, even though he knows full well that when he gets home in the early hours of the next morning soaking wet (from the rain), filthy dirty (from having fallen down an embankment) and with torn clothes (because at the bottom of said embankment was a wicked bramble bush), the very last thing he can expect is any sympathy. When, later on, he looks at his prints and/or slides and muses on the shots that might have been, and resolves firmly to do it all again next week/month/year, but next time to remember to check the shutter speed, aperture and focussing so that with a bit of luck rather more than

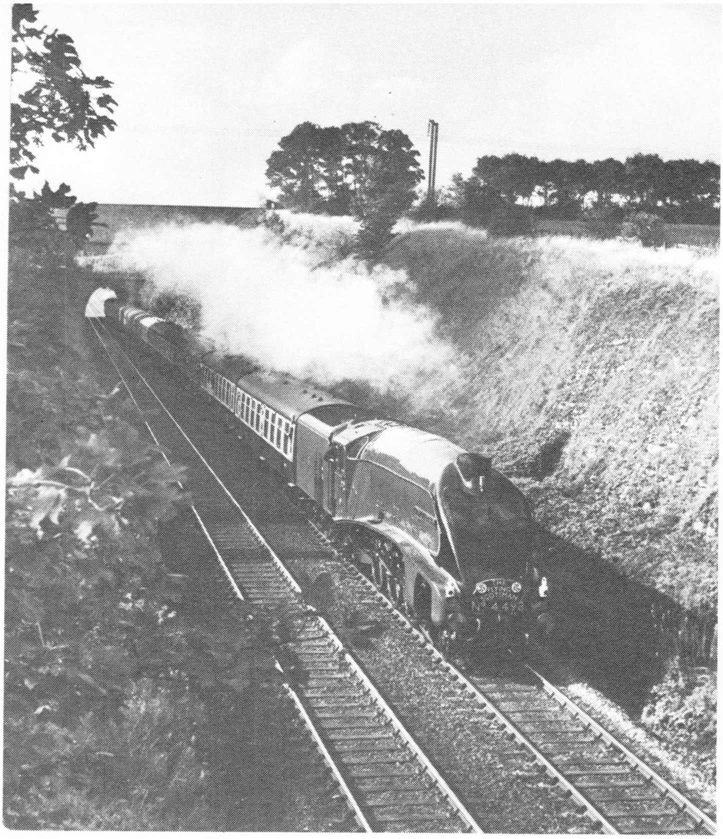
Find out the timing of specials: after a stop for water at Banbury, preserved Manor class 4-6-0 No 7808 Cookham Manor *pilots Hall class 4-6-0 No 6998* Burton Agnes Hall *past Claydon (*above*) with a Great Western Society private special on October 19 1974.*

Slightly too late: with the photographer's view of the train restricted on the right by a signal gantry, and on the left by bushes, maroon-liveried Coronation class Pacific No 46254 City of Stoke-on-Trent *has just managed to sneak its bufferbeam behind the foliage (*above right*) as it heads out of Carlisle past Kingmoor mpd with a lengthy train for Glasgow in summer 1959.*

Small stuff: to minimise rather than accentuate the small scale of miniature railways, it is usually necessary to maintain a low camera angle and to avoid large objects in the immediate background. Romney, Hythe & Dymchurch No 10 Dr Syn *approaches Boltoph's Bridge Road crossing (*right*) with the first train of the day from Hythe to New Romney on June 13, 1976.*



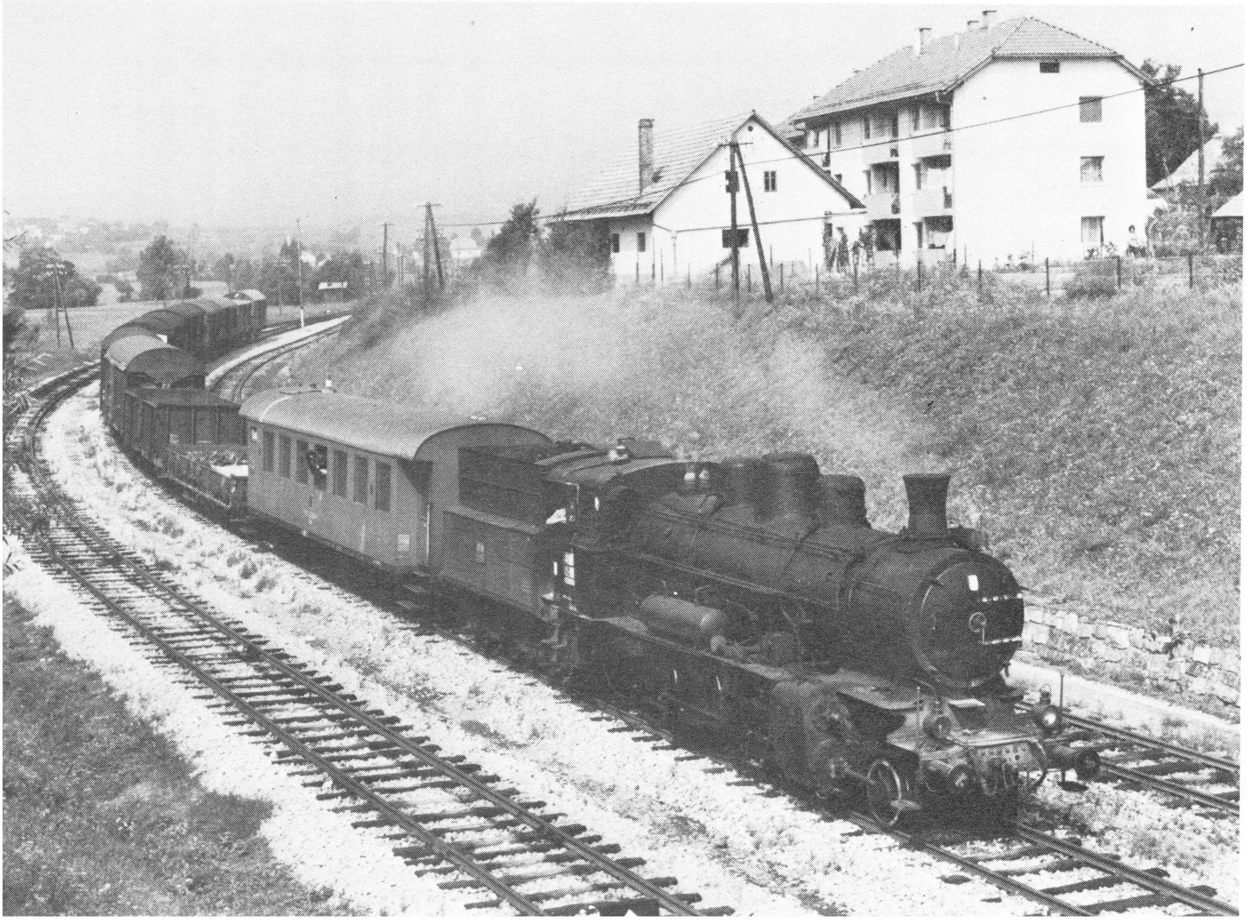




Choose your location carefully: the cutting and lengthy bridge under the A1 near Burton Salmon provide a quiet and leafy setting (left) for this 14-coach Sheffield-Newcastle special in the charge of preserved Gresley ex-LNER A4 class Pacific No 4498 Sir Nigel Gresley *on September 28 1975.*

Keep on the right side of the law — especially in Iron Curtain countries; not all railwaymen in Yugoslavia are as friendly as those here at Trebnje in the north, where they seem used to visiting enthusiasts. Massive-cylindered 4-6-0 No 25.018 heads into town (below) with the morning pick-up freight from Ljubljana on August 15 1976.

Plenty of steam: another dramatic view (below right) of the 'Iron Mountain' rack railway at Vordernberg, with 0-6-2T No 97.209 thrashing up grade, assisted in the rear by sister engine No 97.217, on September 8 1974.



one in ten come out, then he can begin to think of himself as a "Steam Railway Photographer!"

Some Common (!) Expressions to be heard at the lineside

Gricer: Derogatory term for any railway enthusiast — but never oneself.

Clag: Smoke, steam, etc., from a locomotive. Variations include *Clagless Wonder:* an Electric Locomotive.

Box: Any locomotive other than a real (i.e steam) one, such as a diesel or electric. Variations include *Box-photter:* one who photographs boxes (always denied!)

Phot-spot: Photographic location.

Adrift: Running late, or behind schedule. e.g. '30 adrift' means 'half an hour late'. All too common when discussing main line steam specials!

Mickey Mouse Railway: Any narrow gauge or miniature line.

KGV: Preserved ex-GWR King Class locomotive named *King George V*.

Lizzie: Preserved ex-LMS Princess Royal Class locomotive named *Princess Elizabeth*.

EMU: Electric multiple-unit.

DMU: Diesel multiple-unit. (Both are magic trains, having no visible means of propulsion).

Peg: Signal (originally referring to the semaphore type, but 'She's pegged' means that the signal has been cleared, even if the signalling is by colour lights).

Four Foot: The space between standard gauge rails (the odd 8½in never seems to get mentioned!). Definitely not recommended for use by pedestrians.

Pacific; Atlantic; Baltic: Not oceans, but names applied to the wheel arrangements of different locomotive types.

Up or Down: Not in any way related to gradient, nor even to (up) north or (down) south. London is the key, with up trains always travelling towards London, and down trains always away from London. Cross-country lines each have their own rules, so prior knowledge is essential.

Gardening: The removal of unwanted weeds and undergrowth to prevent them intruding on an intended photograph. Very popular with BR, especially if carried out on a large scale, since it saves them the job.

Pilot: Nothing to do with boats or planes, but simply the first of two locomotives pulling a (probably) heavy train.

Banker: Likewise, nothing to do with Threadneedle Street, but an additional locomotive pushing at the rear of a (probably) heavy train.

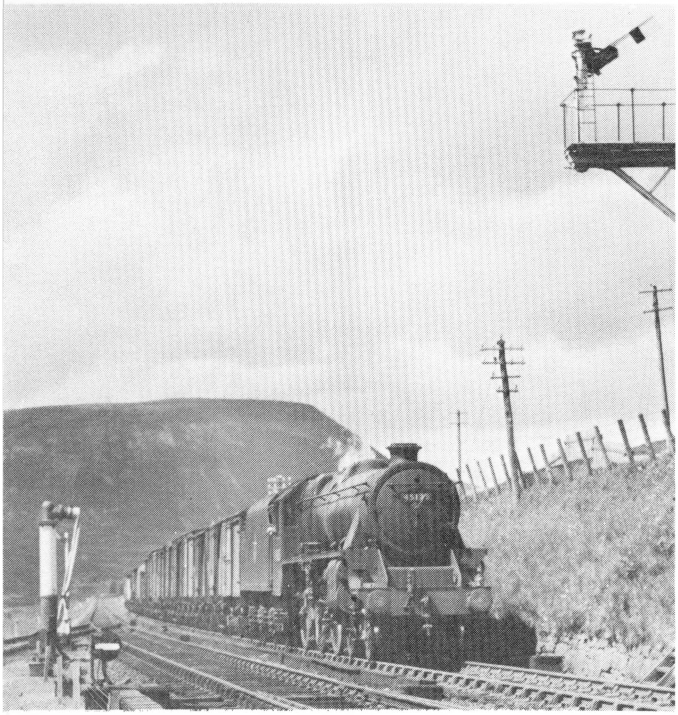
Tail-lamp: Must always be carried and never referred to as a 'rear'-light!

Oi, git-art-of-it! (Spoken somewhat urgently, and usually in unison by several photographers). An invitation to a latecomer to find another position in which to stand. Or else.

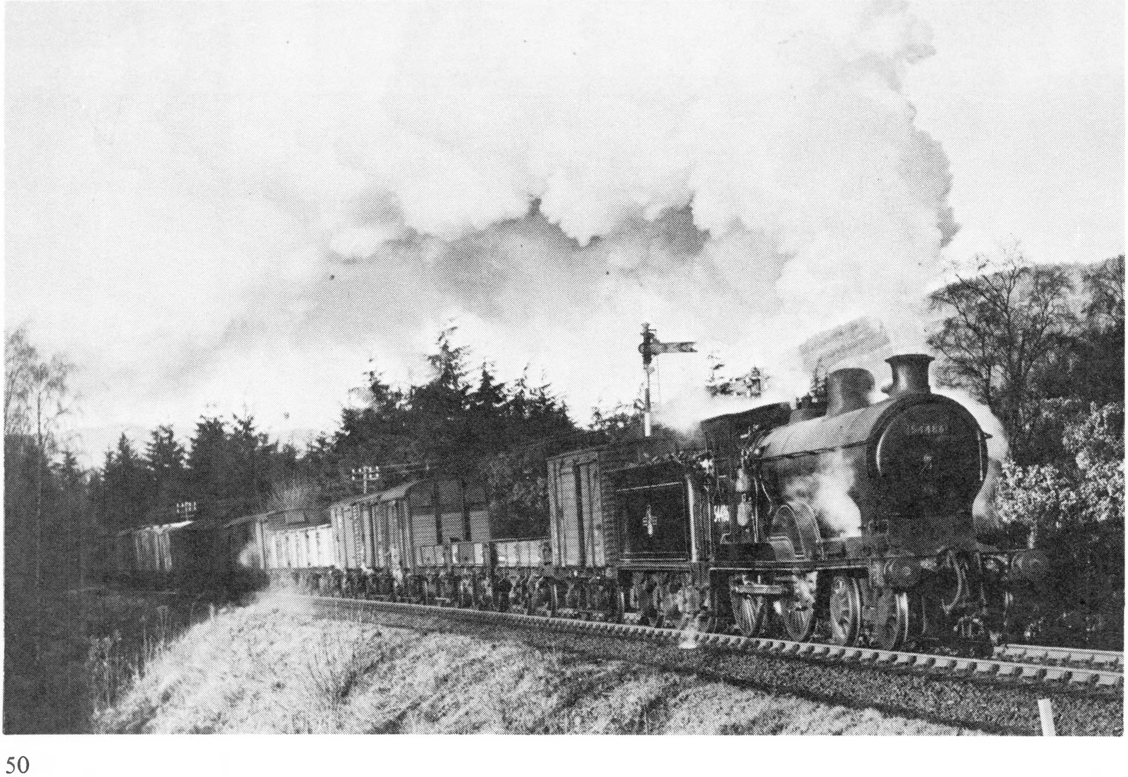
5329

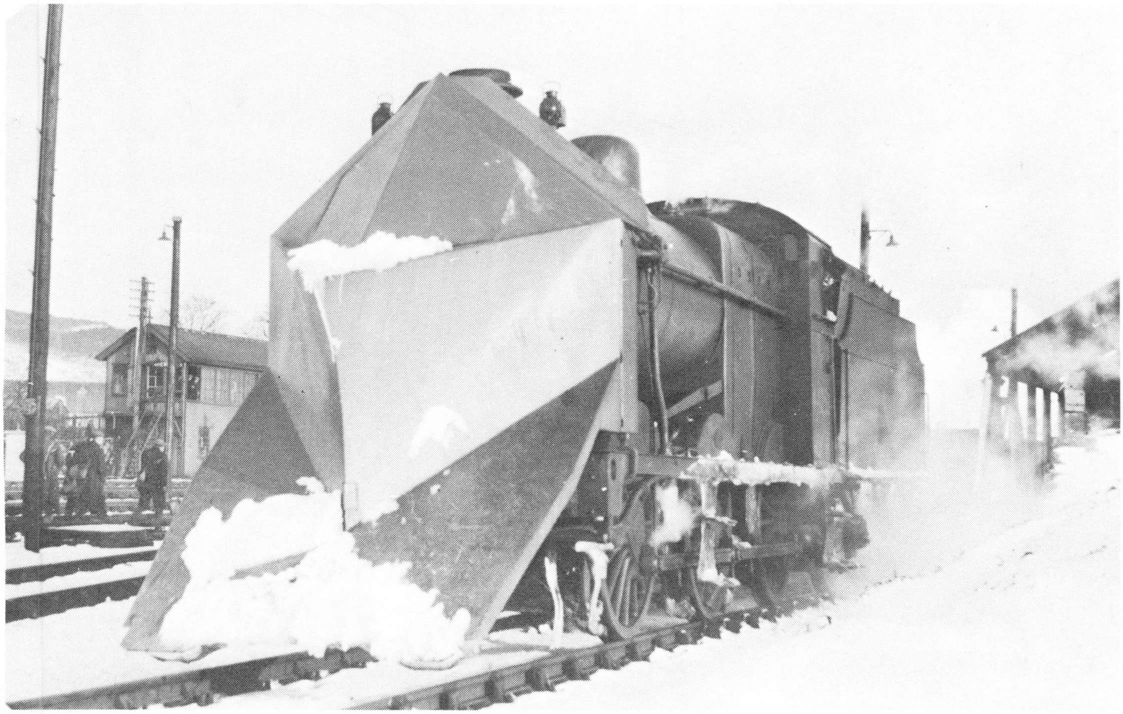
Another Highland Fling

North Sea oil and the rapid growth of tourism have combined to bring a new lease of life to the ex-Highland Railway line from Perth to Inverness. Such has been the growth of traffic over the past decade that the long single-line sections are now being worked at full capacity, and BR are busy restoring passing loops and stretches of double track abandoned at the time of Beeching rationalisation. Some idea of the traffic now carried can be gained from the massive formation of both the Sunday 17.40 Inverness-Euston, including sleeping cars, seen (above left) leaving Inverness on March 31 1974 in the charge of a brace of class 24 Bo-Bos Nos 5130 and 5118, and the 13.40 Edinburgh-Inverness, heading through Dunkeld (below) behind English Electric class 40 1Co-Co1 No 40064 on June 25 of the same year. Even the lines north of Inverness, only a few years ago threatened with total closure, are attracting more passengers and freight traffic; class 26/1 No 5329 approaches Lairg (below left) with the 10.50 Inverness-Wick and Thurso on October 6 1973, while sister locomotive No 5341 pilots class 24 No 5116 into Kyle of Lochalsh (right) with the daily freight from Inverness on May 30 1972.
/Brian Morrison; D. Griffiths; P. J. Fowler; J. H. Cooper-Smith

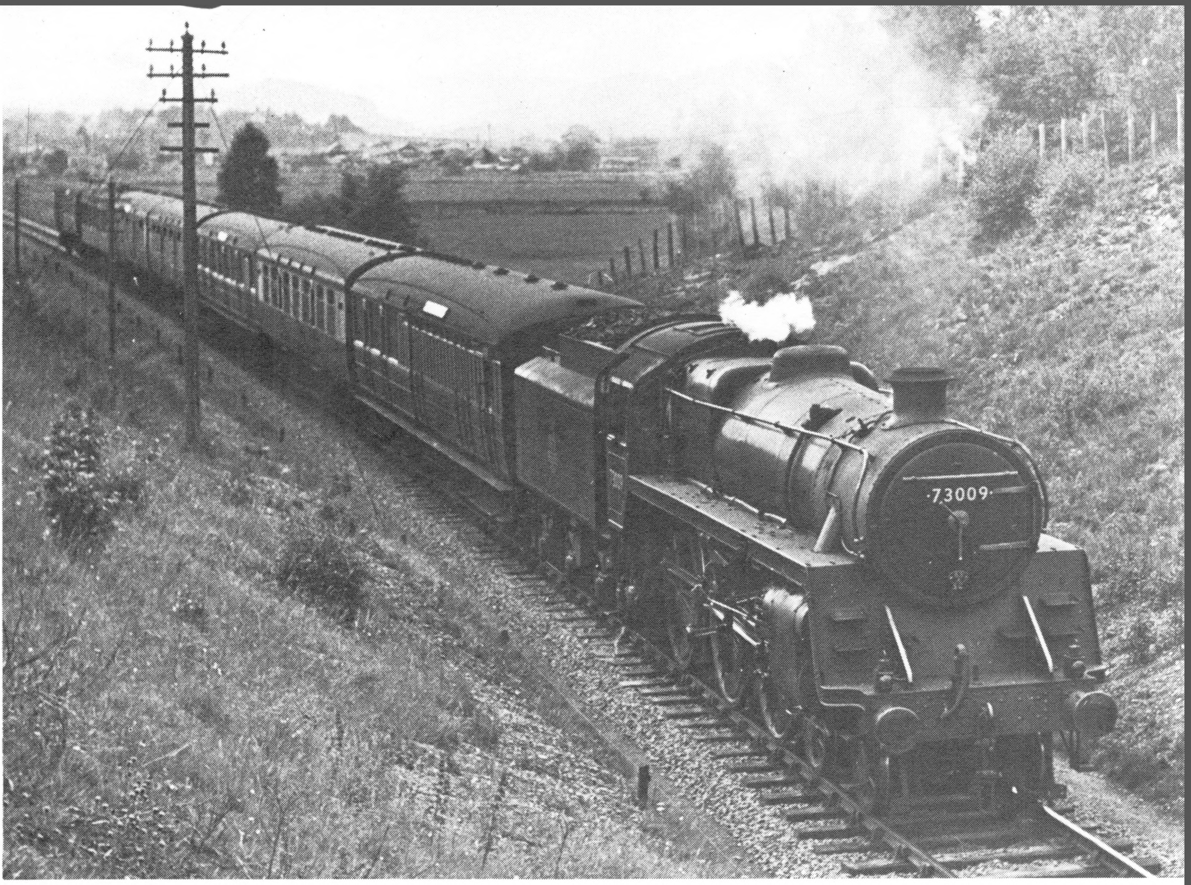


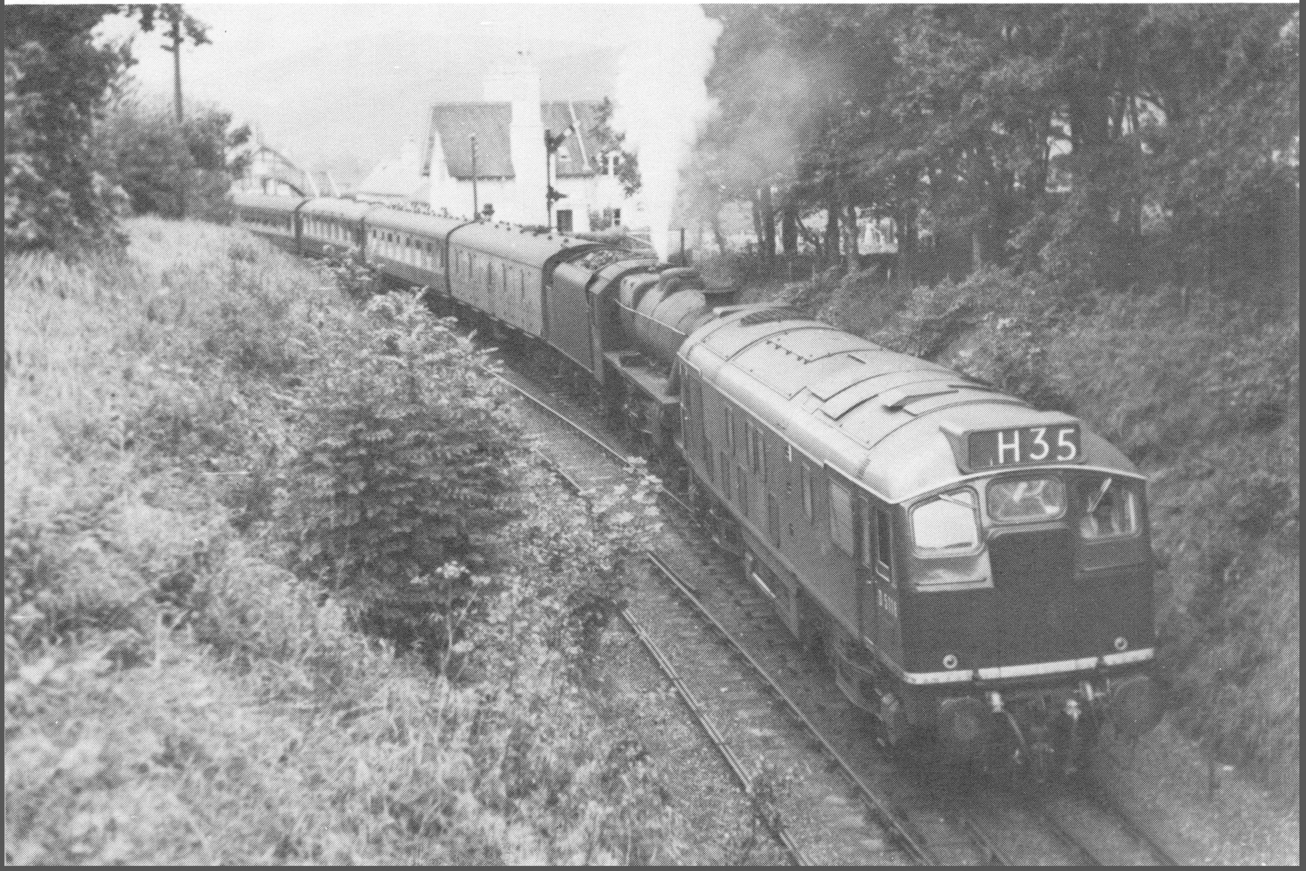
*One of the stretches of line currently being relaid with double track is that between Dalwhinnie and Blair Atholl, including the climb to Druimuachdar Summit. The original double track was still in use in August 1957 as Stanier class 5 4-6-0 No 45125 rolls down into Dalnaspidal (*left*) with an up freight. South of Blair Atholl, it is proposed to reinstate the passing loop at the now closed station at Dalguise; ex-Caledonian Railway Pickersgill 4-4-0 No 54486 gets the distant on (*below left*) as it approaches Kingswood with a Blair Atholl-Perth pick-up freight in November 1959. Winter weather can cause havoc on the exposed parts of the Highland main line, and it is partly to improve reliability of services during adverse weather conditions that the improvements are being made, together with the provision of additional snow fences. Ready to tackle the demon snow over Druimuachdar in steam days, complete with bowler-hatted inspector, is Midland class 4F 0-6-0 No 44253 at Aviemore (*right*) on February 19,1951. A decade later, but still in wintry surroundings, BR Standard class 4 2-6-4T No 80093 banks the diesel-hauled 12.05 Perth-Inverness through Struan and up to Dalnaspidal and Druimuachdar on 2 January 1961* (below right)./W. J. V. Anderson (4)

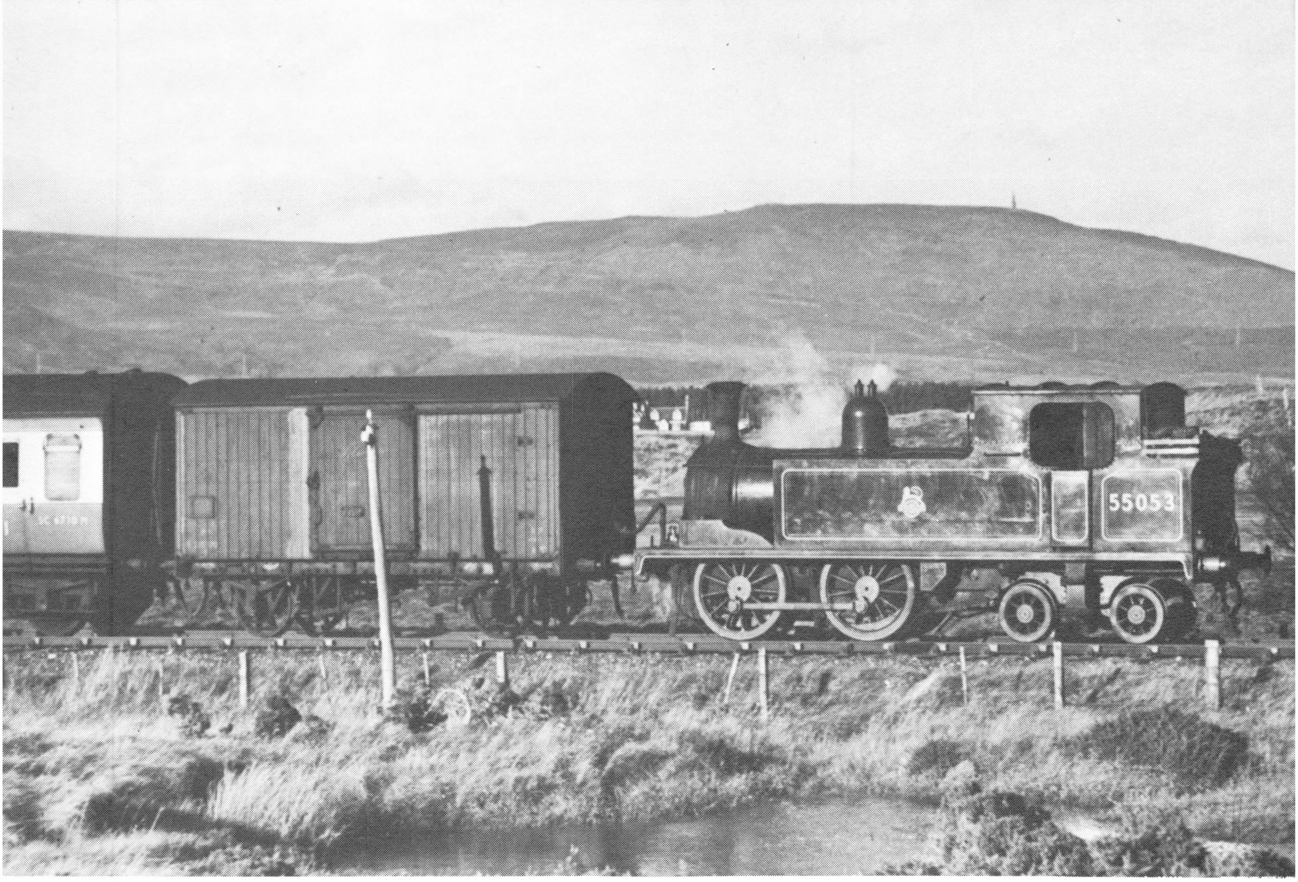




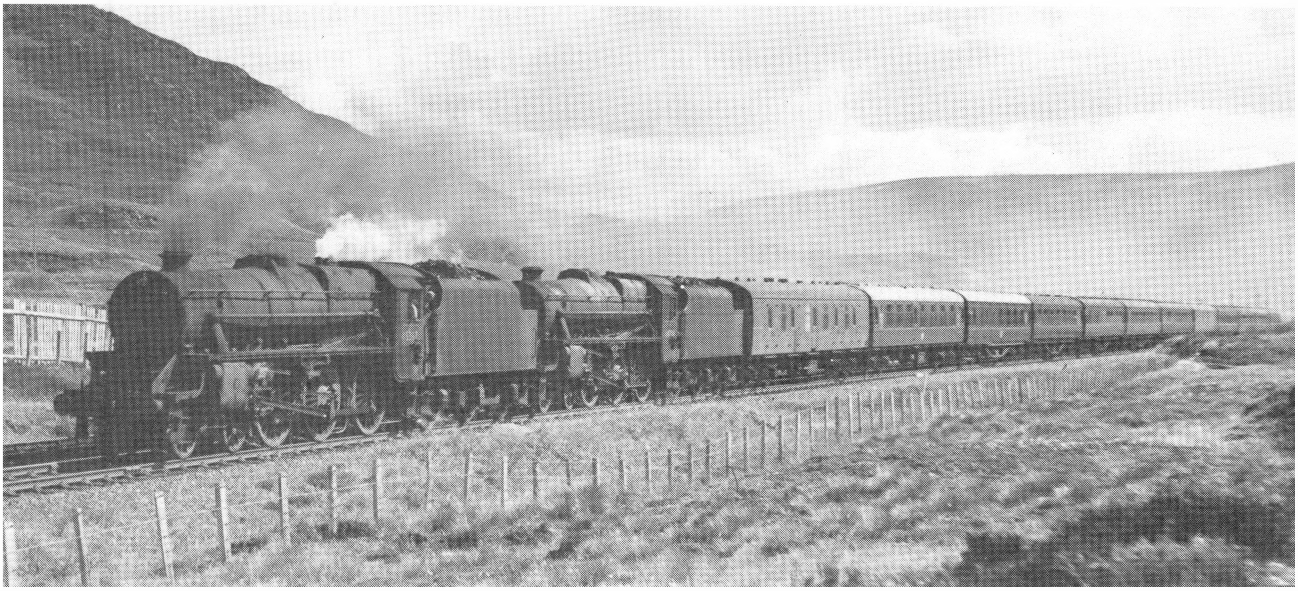
M 31300 M
80093

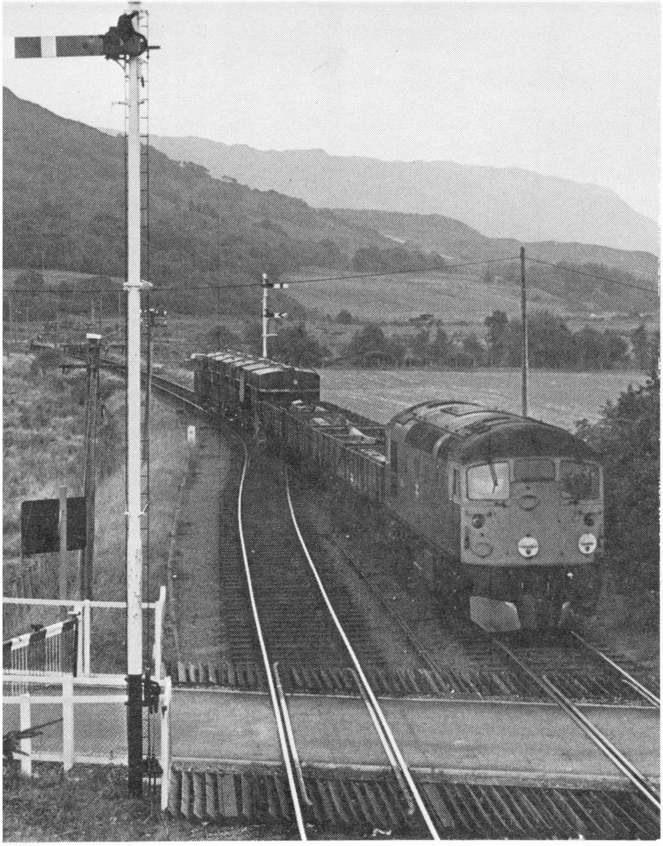

73009


H35

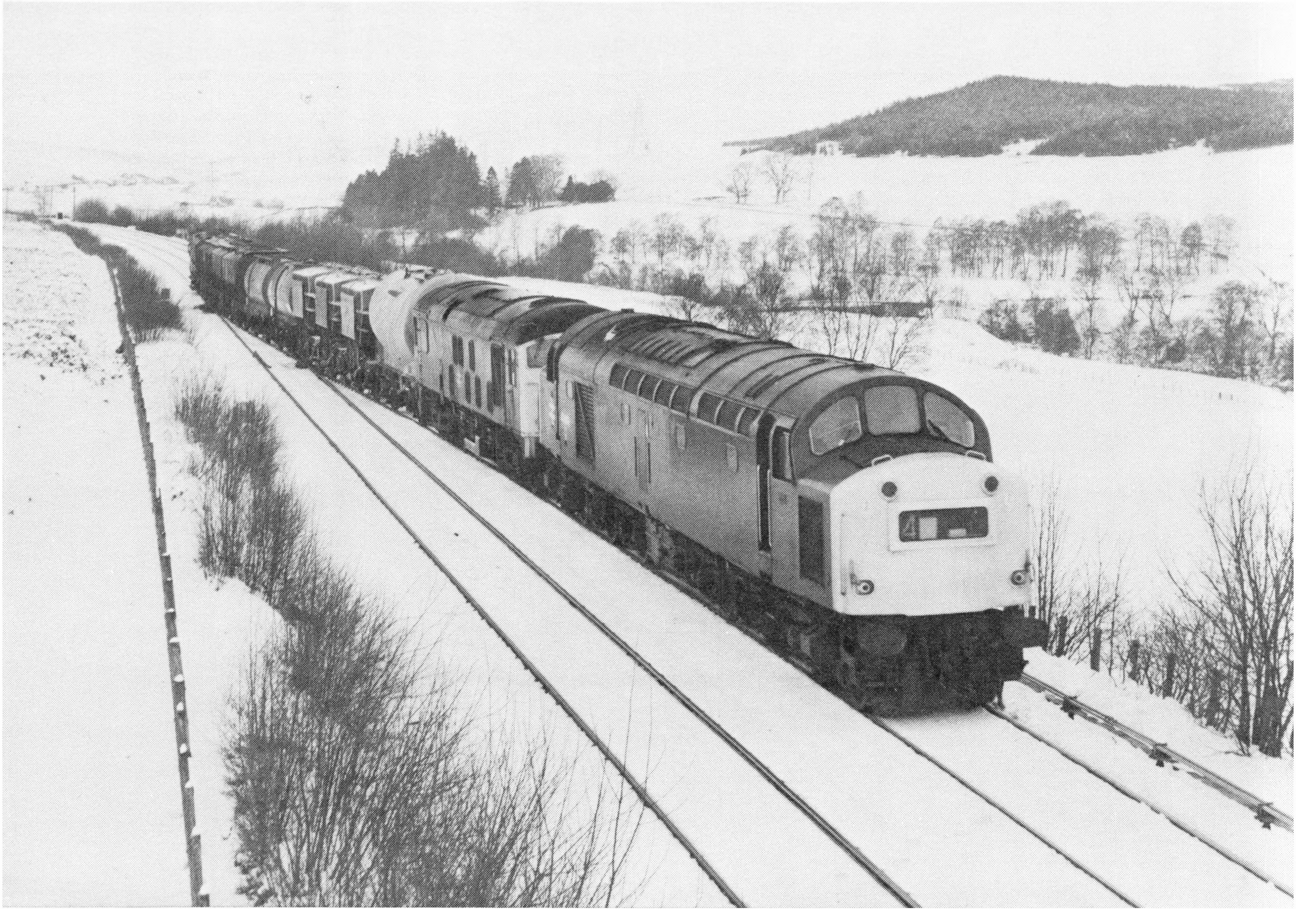


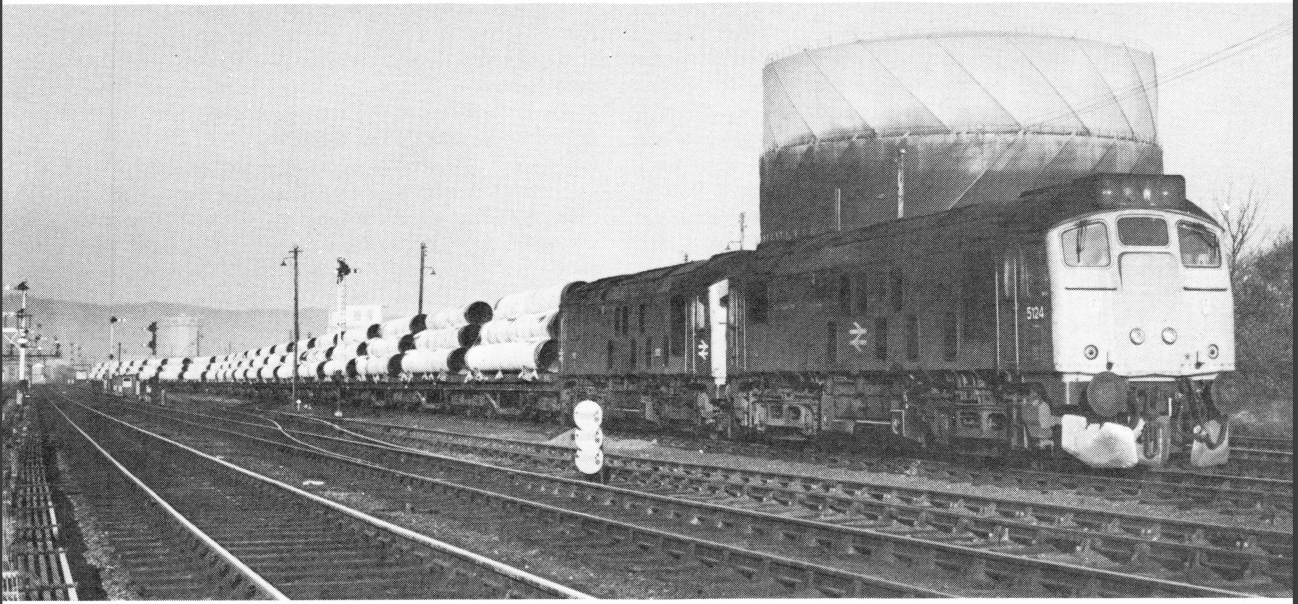
*On a dull day early in 1952, new BR Standard Class 5 4-6-0 No 73009 hurries away from Newtonmore with the 09.25 Edinburgh-Inverness (*above left*). The Stanier and Standard Class 5 4-6-0s between them provided the backbone of Highland line motive power for the decade until the diesels came; during the transition period from steam to diesel in the early 1960s, mixed motive power on double-headed trains was not uncommon, as evidenced by this view (*left*) of BR/Sulzer Class 24 No D5118 piloting Stanier Class 5 4-6-0 No 44785 away from Helmsdale on the 15.35 Wick-Inverness. Nowadays, the single line sections on the Highland main line are worked on the tokenless block system, but tablet working was still the rule in 1960 and both the Stanier Class 5 4-6-0s, Nos 45367 and 44704, heading north over Druimuachdar (*below*) with an afternoon train on August 13, have cabside-mounted automatic tablet-changing equipment. Two months earlier, on June 13, the little branch from Dornoch to The Mound, on the Inverness-Wick line, closed to all traffic. In its last few years it was worked by, of all things, ex-GWR 0-6-0PTs, but for many years beforehand the motive power was provided by handsome little Drummond Class OP 0-4-4Ts; on a fine day in October 1956, No 55053 bowls across country near Skelbo with the 14.05 train from The Mound to Dornoch (*above*)./*Gilbert Ogilvie; E. W. H. Greig; W. J. V. Anderson; P. H. Groom





*The decision to close the Dingwall-Kyle of Lochalsh line to all traffic from December 31 1973 was rescinded at the eleventh hour because of the possibility of the development of an oil platform construction site in the Loch Carron area. In the event, authority was given for the construction of a yard to build concrete oil production platforms at Loch Kishorn, and a new terminal has been constructed at Strome Ferry to handle the large amounts of cement involved. Evidence of this new traffic can be seen in the form of cement hopper wagons at the rear of the Strome Ferry-Inverness freight approaching the new lifting barriers at Strathcarron (*left*) behind Class 26 No 26044 on September 20 1976. The additional traffic and heavier loads have brought larger locomotive types to the Highland; returning empty cement hoppers are once again the load as Class 40 No 40113 leads Class 24 24107 into the loop at Dalanroch (*below*) on snowy February 3 1976 to allow the 13.15 Edinburgh-Inverness to pass. Prior to the completion of the West Coast main line electrification to Glasgow, and their consequent transfer elsewhere, the English Electric Class 50 Co-Cos worked through to Inverness with trains from the South; No 424 waits to return south with a Motorail train for London (*bottom right*) as class 24 No 5126 takes the through avoiding line north of Inverness with a freight from Invergordon to the south on September 19 1973. Another regular trainload traffic won as a result of North Sea oil development is that of coated pipes from Invergordon. Heading south through Inverness yard with a heavy train of pipes for Maud are class 24s Nos 5124 and 5113 (*centre right*) on April 1 1974. All this extra heavy traffic has thrown a considerable additional burden on tracks used to the lighter loads of more leisurely days and considerable engineering works are in hand to improve alignments and overall line speeds. An unidentified class 24 rumbles over the Kyle of Sutherland at Invershin (*top right*) with a southbound ballast train on April 11, 1973.*/G. A. Watt; D. E. Canning; David Cross; Brian Morrison; Peter Robinson




5124

424

Safety Thirst

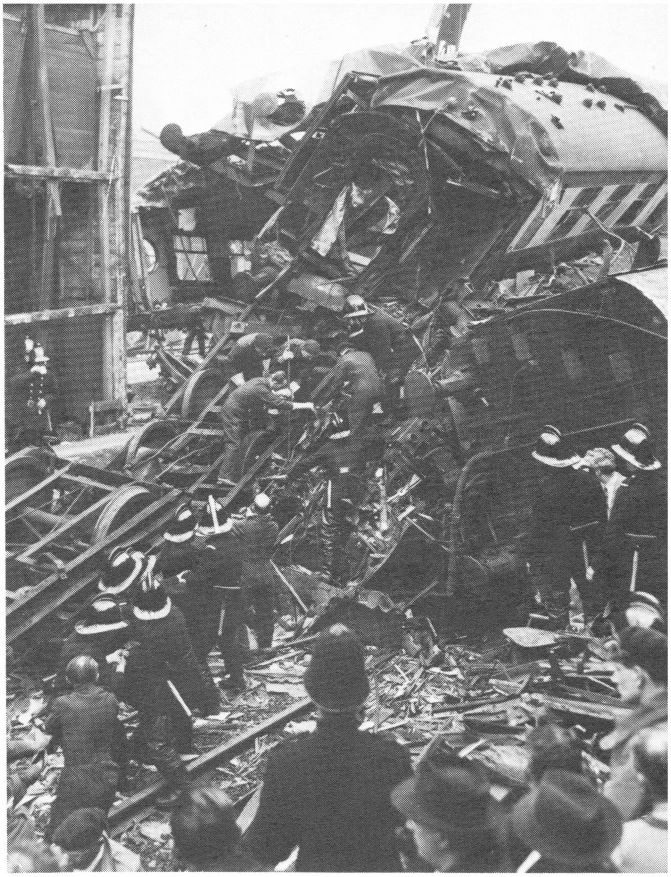
Geoffrey Kichenside

The 30 years since Nationalisation of British railways in 1948 have seen more changes in railway operating methods and technical equipment than ever before in railway history. When the four Grouping companies were brought together they were still only on the edge of the technological revolution in railway signalling. On many lines procedures and equipment were much as they had been for at least half a century, following principles established by the 1889 Regulation of Railways Act, which brought the force of law behind the adoption of interlocking between the levers controlling signals and the relevant points, and the use of the absolute block system on passenger lines. Train movement was still largely controlled by closely-spaced signalboxes, operating points and signals mechanically by rodding and wire, and messages were passed between signalboxes about the passage of trains by block instruments which were basically only a slightly more advanced form of the electric telegraph originally developed early in the Victorian era.

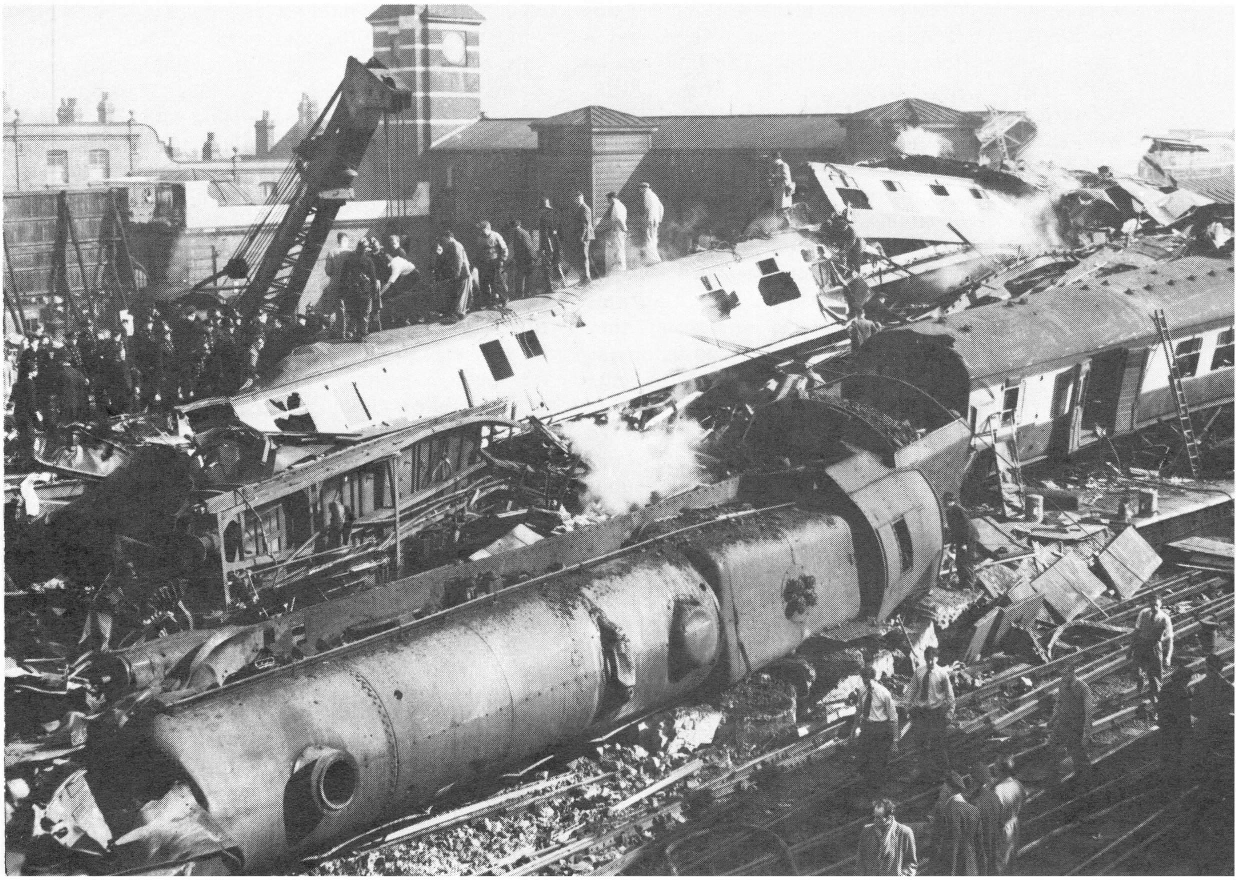
Yet most of the ingredients for the signalling revolution which has occurred in the last 30 years were already known in 1948 and, moreover, in many cases had been tried and tested in minor installations over many years. Satisfactory power operation of both signals and points had been successfully achieved under service conditions around the turn of the century, reliable, fail-safe track circuits were evolved in the Edwardian era, electric colour-light signals were in use on London's underground lines by the First World War, and on surface lines by the 1920s, and route relay interlocking, with control panel techniques in which the operation of a single switch could set up a complete route from signal to signal had been pioneered by the LNER in the 1930s for resignalling schemes in its North Eastern area. There was even a small experimental entrance-exit signalling control panel in use by 1939 on the CLC route into Liverpool.

Despite all these developments, there was no rush by the group companies to adopt this new equipment and its associated practices on a wide scale except perhaps on the Southern Railway, which adopted multiple aspect colour-light signals as an adjunct of electrification on many of its suburban routes in the 1920s and 1930s and on parts of the main line to Brighton, electrified in 1932/3. In most cases, the resignalling was necessary to cope with more intensive services, but even then existing signalboxes were often retained, with mechanical levers adapted to work electric control circuits for the new signals. True some signalboxes were closed and automatic signals used on sections of plain line but, in general, signalbox control areas were not enlarged by much, often to no more than a mile or so of route. The LNER was perhaps the most adventuresome, with its all-electric route-relay interlockings used instead of mechanical interlocking for new installations at Hull, Thirsk, Leeds and Northallerton, although even in these cases the control areas covered little more than the station areas. And the reason was that at that time one important feature was still lacking — the means of controlling remote relay interlockings other than by direct cable for each function. The railways had not really begun to think big; they convinced themselves the time was not opportune, for, even then, capital for new investment was tight, and while existing equipment signalled trains safely and men were available to staff signalboxes there was no pressing need to change.

Yet even where small additions to improve safety could have been installed they were often not thought worth while. 'Welwyn control', for example, could be superimposed on the existing signalling and ensured that, once signalled, a train had to be proved to have passed through a block section and beyond towards the next signalbox ahead, with the signals returned to danger behind it before a second train could be signalled. The equipment consisted of two track circuits at the approach to home and starting signals linked with the block instrument for the rear section, and combined with sequential locking so that the stop signals at each signalbox had to be pulled in the order: outer home; inner home; starter; advanced starter. Essentially, each signal had to be at danger before the signal in its rear could be cleared. The most advanced starting signal could be cleared only with 'line clear' displayed on the forward section block instrument, and then only for one pull. It was known as Welwyn control because it was evolved to prevent a recurrence of an accident at Welwyn Garden City in 1935 in which a signalman prematurely cleared a block instrument and accepted a second train into an occupied block section. Yet this device was only in use on a few main lines by 1948 and on some principal trunk routes there was nothing more to ensure correct



The massive pile of wreckage confronting rescuers after the double collision at Harrow & Wealdstone on October 8 1952, when an overnight Perth-Euston train ran past signals at danger and ploughed into the back of a local train standing in the station. A Euston-Liverpool express double-headed by Jubilee 4-6-0 No 45637 Windward Isles *and the newly-rebuilt ex-Turbomotive No 46202* Princess Anne *ran into the wreckage and were both damaged beyond repair. This disaster, in which 112 passengers died, and that at Lewisham in 1957, in which 90 people died, were both caused by drivers running past signals at danger in fog. Both would probably have been avoided if the lines and locomotives concerned had been equipped with the Automatic Warning System, under development at the time of the Harrow accident. But even today, more than a quarter of a century after the Harrow accident, little more than a third of BR is equipped with AWS.*



methods of operation than the signalmen's discipline in carrying out the block signalling routine, and the possibility of human error was very real.

Even at main line stations track circuits were not universal. In 1948 the only reminder of which platforms at Euston were occupied by trains was a blackboard in the signalbox (provided by the men themselves) on which the signalmen chalked the arrivals and departures as they occurred. There was plenty of scope for a wrong-side failure in this piece of unofficial 1940 s technology! Inevitably, from time to time a train would be overlooked and a signalman would inadvertently try to stand two trains at the same platform at the same time! It was remarkable that the signalmen at Euston at that time managed to work the station as safely as they did. To be fair, the LMS had wanted to rebuild Euston for some years but money for major reconstruction had not been forthcoming; next, the Second World War intervened, and afterwards the LMS was reluctant to spend money on piecemeal improvements when complete resignalling was in the offing. In the event, Euston was eventually modernised with new signalling in 1952, and then all over again for electrification in 1965 as part of the complete reconstruction of the station and its approaches.

In 1945, after six years of war, available finance was directed towards restoring damaged equipment and catching up with the renewal of life-expired apparatus, often on a like-for-like basis. However, the LNER and Southern were gradually working towards the completion of resignalling schemes planned and in some cases started before the war. The Eastern and North Eastern Regions, as successors to the LNER, completed the new power signalbox at York, equipped with a route-relay interlocking, and at the time the largest signalbox in the world, while on the Great Eastern lines from Liverpool Street resignalling was an adjunct of electrification to Shenfield in 1949. Several signalboxes in the latter scheme had entrance-exit control panels in which the operating switches and buttons were placed on the track diagrams geographically according to the equipment they controlled. Moreover, the signalboxes had automatic train describers in which the displays showing letter codes for train class and destination were divided into apertures for each signal section and codes moved from one to the next or across from the display for one line to another in step with the train. With continuous track circuit control and automated route-setting equipment ascertaining that no conflicting routes had been cleared and that no trains were already on the line in question before setting points and clearing signals, here was a system which in normal operation virtually eliminated signalmen's mistakes.

The massive 1955 Modernisation Plan, apart from heralding the end of steam traction in favour of diesel and electric power, also envisaged vast resignalling schemes on several main lines. The York and Shenfield line resignalling schemes had made use of developments in signalling equipment virtually to the then known limit of power signalling techniques. Two more ingredients had still to come — electronic remote control systems, by which several circuits with coded signals could be sent over a single pair of wires, and component miniaturisation, particularly of signalling relays. These developments meant that the remote control of satellite slave interlockings several miles away from the controlling signalbox became far more realistic, and that the size of relay rooms could be reduced because the equipment they contained was smaller. Alternatively, of course, a large relay room could contain much more equipment. The way was now open to more extensive signalbox control areas with limits dictated by convenient operating boundaries rather than the range of the equipment. It is a far cry from the old 350yd limit for mechanical point operation in manual boxes to the 100 route mile control areas of recent centralised power signalboxes. The development of these features can be traced by the gradual enlargement of signalbox control areas during the 1960s. Moreoever, computers are now at the heart of the latest train describer systems, which not only perform train recording and reporting functions but also trigger off automatic announcements and are even capable of recalling the whereabouts of trains and their identity during a momentary power failure, which, without a memory function, would be lost. Computers have not yet been used for route setting, except for an experimental installation on London Transport, and even in this case it is in conjunction with conventional LT mechanical interlocking equipment.

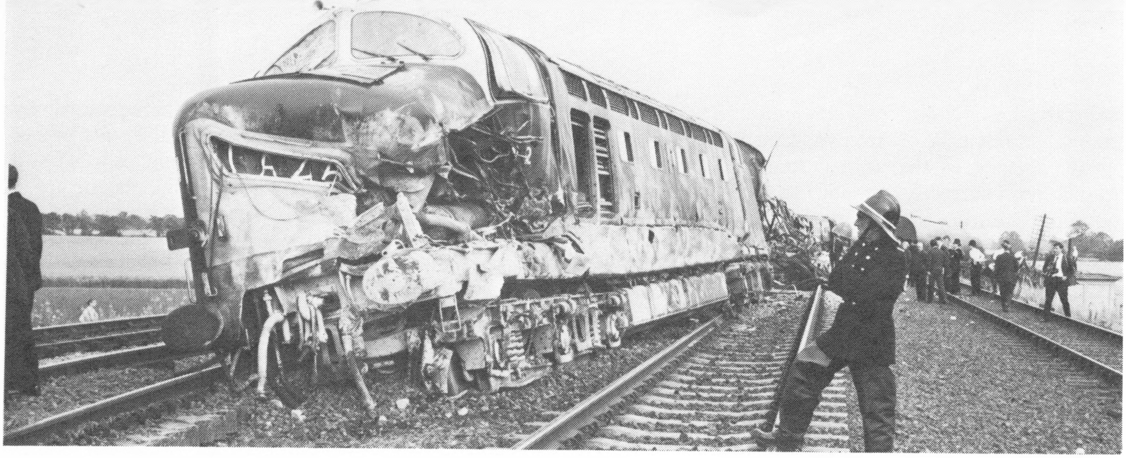
The expansion of modern signalling has been so widespread that centralised power signal-boxes with colour-light signals and continuous track circuiting now control all the lines between Paddington, Bristol and the approaches to Taunton; on the South Wales line to Swansea; on the North and West line between Bristol, Birmingham, Derby and Leeds; and between Euston and Glasgow, as well as many other routes on the Southern, Eastern and Scottish Regions.

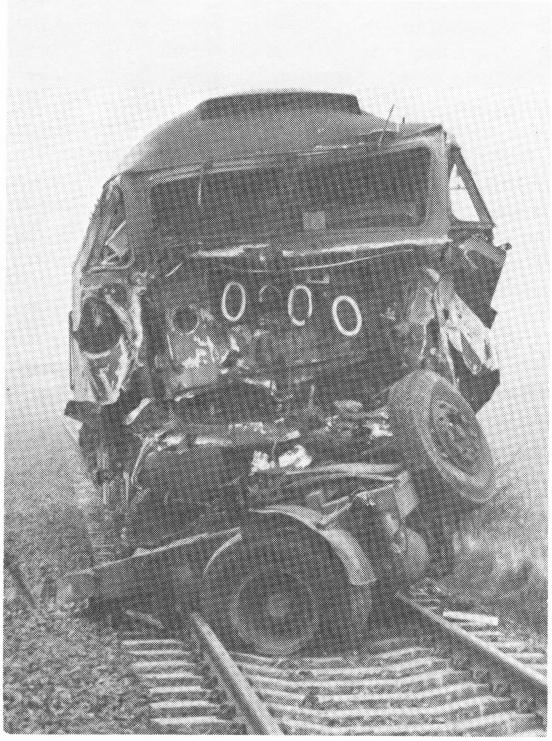
Yet despite automation, accidents still happen. They might arise if, for example, a fault occurs in signalling equipment which rightly holds signals at danger. To keep traffic moving, drivers are often instructed to pass such signals at danger and proceed cautiously. It is in these circumstances that the safety provided by interlocked equipment and normally taken for granted is over-ridden, and it is vital for a clear understanding to be reached between signalmen and drivers, and for messages to be clear and precise, because a moment's unthinking action could lead to disaster. With modern centrally-controlled power signalling, when a signalman might be controlling trains 50 miles or more away, as long as the normal signalling controls are functioning correctly all will be well. But in fault conditions, during engineering works, or perhaps when local shunting moves are being made into sidings for which control of the points concerned is transferred to men on the site, through the release of a groundframe, it is vital that shunters and train crews must know precisely the limits of their control and observe the laid down routines regarding shunting moves, not only in and out of sidings but also along main lines, and how far they can proceed, for example, in the wrong direction against the normal traffic flow.

The Southern had two major accidents, one in October 1947 at South Croydon and the other in December 1955 at Barnes Junction, when signalmen incorrectly released Sykes block instruments, thinking erroneously that they had failed. The Sykes lock and block system utilised an electro-mechanical locking sequence developed in the last century which coupled the working of block instruments with the signals concerned by means of treadles on the track. A train had to be proved to have cleared a block section by operating a treadle, the home signal behind it restored to danger and the ¼ mile clearance overlap beyond the signal proved free before the block instrument for the rear section could be cleared again for a second train. It was in many ways a predecessor of the Welwyn control of the mid-1930s. Both at South Croydon and Barnes the block indicator for the rear section showed it to be occupied by a train, but in both cases the signalmen forgot trains and assumed the instruments had failed. At South Croydon the forgotten train was standing in fog at Purley Oaks starting signal but still correctly locking the rear section instrument, while at Barnes the train had not reached the home signal. By using the release key to unlock the instrument (normally used only if a train could not proceed and had to be cancelled from the instruments, or for a fault) the signalmen lost the automatic protection and were able to accept second trains into occupied sections, whereupon collisions were inevitable — in both cases with heavy loss of life.

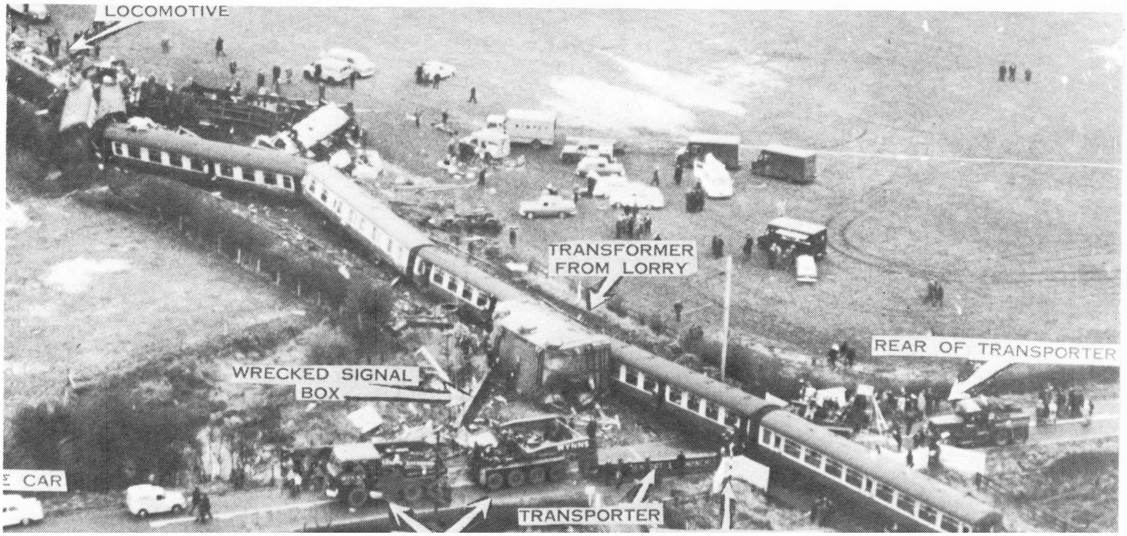
At Stechford in February 1967 the LMR main line from London to Birmingham had only recently been resignalled with modern colour-light signals, continuous track circuiting and centralised control from Birmingham New Street panel signalbox. Stechford is the junction between the Stour Valley route through Birmingham and the line by-passing Birmingham to Wolverhampton known as the Grand Junction line. Because of a number of siding connections at Stechford certain points were controlled from ground or shunting frames at the site, released by electric locks operated from Birmingham panel, the point levers being worked by a shunter. On February 28, 1967 a ballast train arrived in the down sidings and the locomotive was to run round and work the train to Coventry. The train was too long for the run round move in the sidings and the train was shunted across to the up Grand Junction line clear of the Stour Valley tracks. The intention was to run the locomotive round by a wrong direction move along the down Stour Valley line and back across to the up Grand Junction line at the other end of the station.

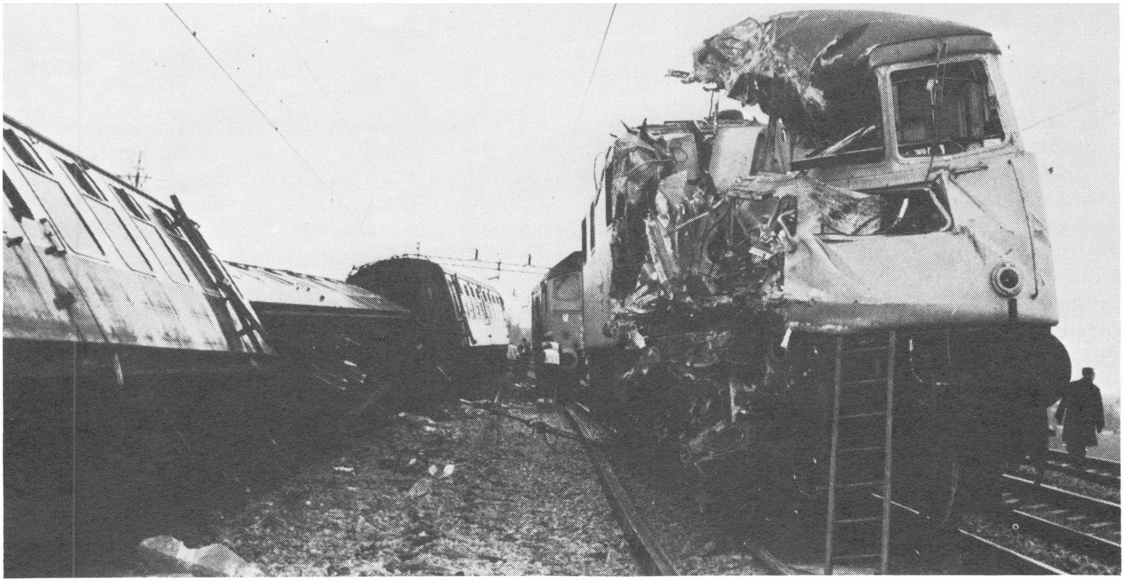
Freight train derailments can be highly destructive, making recovery and repair a time consuming and difficult task. Such a fate befell class 37 No 37143 at Marine Colliery, Ebbw Vale in July 1975. A special slope had to be cut down from the running lines to the luckless runaway before it could be winched up, still on its side, by recovery teams./British Rail

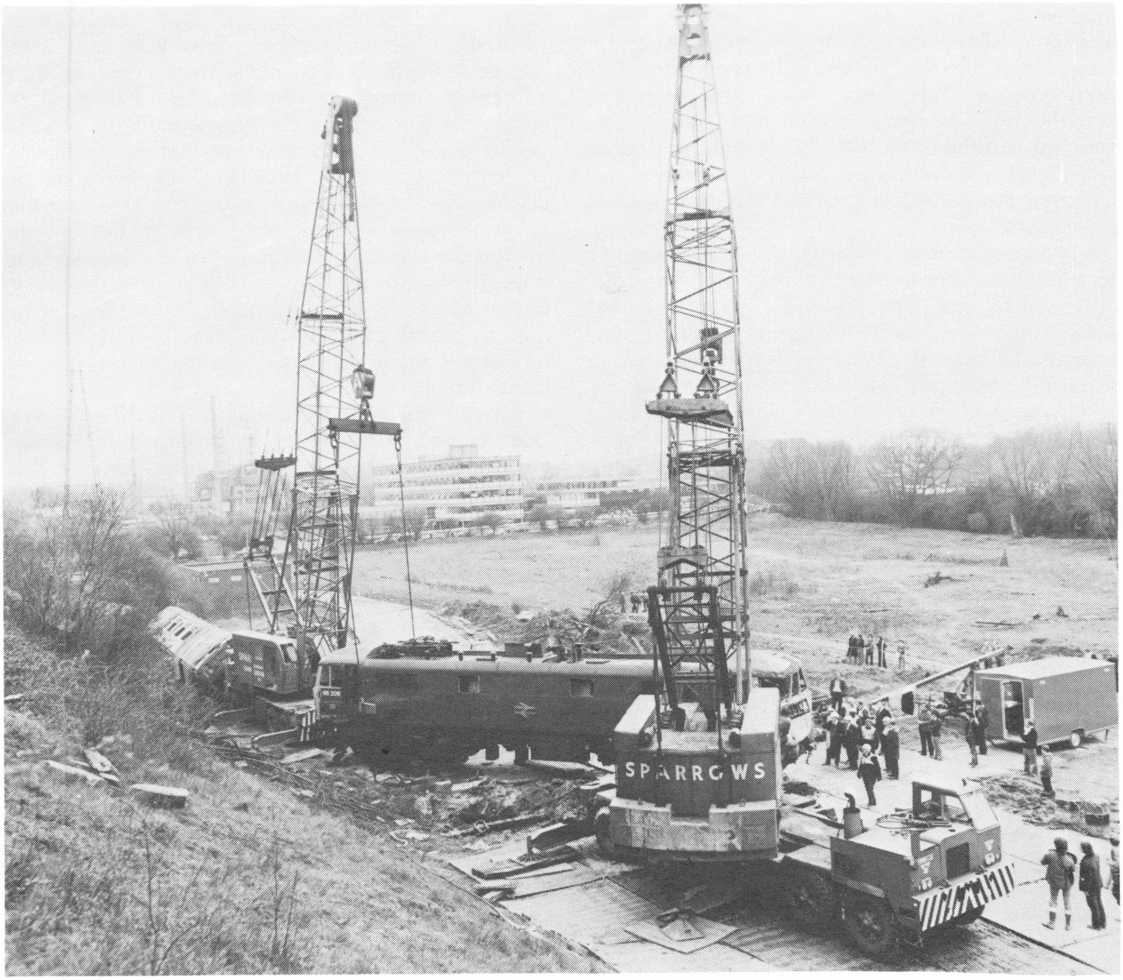




*One of the greatest potential dangers of freight train derailments is that high speed passenger trains running on adjacent lines might collide with the wreckage; this was the scenario that brought about the premature demise of English Electric prototype No DP2 when it was derailed at speed near Thirsk whilst working the 12.00 Kings Cross-Edinburgh on July 31 1967 (*above*), having struck a derailed cement wagon from a train running on the adjacent slow line. Vandalism is thought to have been the cause of a steel stillage falling off a down freight train on the evening of January 23, 1975, into the path of class 83 No 83003 at the head of the delayed 19.25 Manchester-Euston train, derailing it on to the down fast line where it was almost immediately struck by class 86 No 86209 speeding north at the head of the 22.15 Euston-Glasgow sleeper. One side of 83003 was torn away (*above right*) whilst No 86209 was sent toppling down a steep embankment, followed by the first vehicles of its train. The class 83 was damaged beyond repair, but BR mounted a major operation to recover No 86209 (*below right*) which was less badly damaged, having made a relatively soft landing amongst the lineside vegetation. The speed and relative silence of approach of modern forms of traction is still not generally appreciated by the public, and there have been several bad level crossing accidents in recent years. That at Hixon on January 6, 1968 (*below*), when a speeding Manchester-Euston express hit a transformer on a police-accompanied low-loading road vehicle at an automatic half-barrier level crossing raised so many questions that a formal Public Inquiry was set up, the first into a rail accident since the Tay Bridge disaster of 1879. Yet despite the publicity surrounding this and similar accidents, the public still tend to use crossings in a rather cavalier way; this was the sad scene (*left*) on March 15 1976 after class 47 No 47274 hit a lorry on a crossing near Annan while working the 20.55 Euston-Stranraer boat train, killing both footplatemen as well as the lorry driver.*/John Boyes; British Rail (2); Graham Jennings; K. S. McQuade






SPARROWS

This was not an authorised move but the shunter had intended asking the Birmingham signalman for special permission to make it. In anticipation he retained the release for the up/down Grand Junction crossover through which the train had just set back and allowed the locomotive to run forward to the down Grand Junction line. The shunter restored the ground frame to normal but had not asked to make the wrong direction move. He shouted and waved to the guard of the ballast train indicating that he should go to the back of the train but his wave was taken by the crew of the locomotive as authority to move towards the down Stour Valley line. The diesel locomotive had just reached the diamond crossing with the up Stour Valley line when the crew realised all was not well, for an electric train was standing at the platform on the down Stour Valley line. Little did they know that disaster was only seconds away for, as they stopped, an up express electric multiple-unit train approached the crossing at 60mph. The collision with the diesel locomotive threw the two leading coaches of the electric train into the air and they were extensively damaged as they tore down the overhead electrification catenary masts and booms and ploughed into the down track killing eight passengers and the driver. A moment's thoughtlessness had destroyed the protection given by the most modern signalling technology.

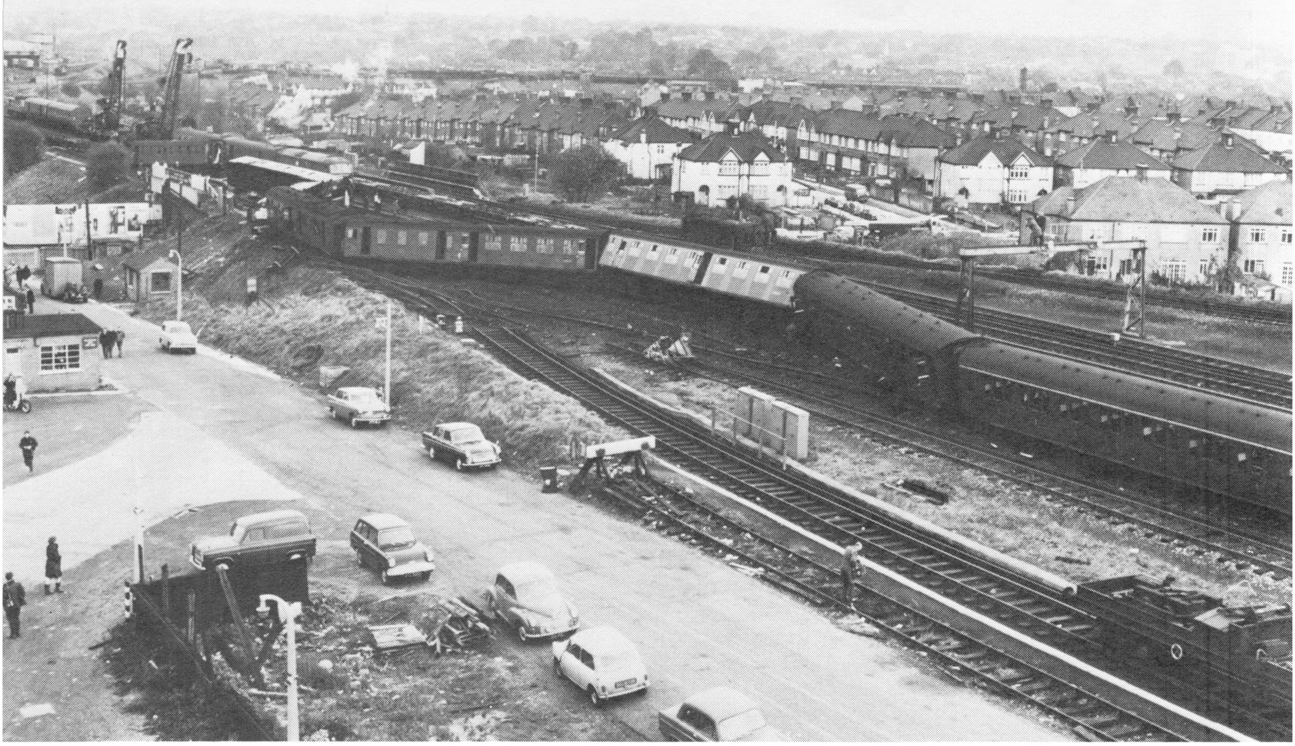
A feature of modern power signalling is the complex electric and electronic circuitry for controls, indications, and interlocking. In mechanical signalboxes the interlocking is carried out mechanically and any changes or maintenance had to be clearly arranged with the signalman. Taking locking components apart usually meant unbolting the various bits and pieces and as long as they went back the same way all was well. If a piece accidently dropped into another part of the locking frame a shout to the signalman not to pull any levers and a few muttered curses by the lineman as he tried to manoeuvre his fingers round the slides and tappets to fish it out was about the worst that could happen. In a power signalbox relay room, however, metal components dropped accidently against electric terminals might short-circuit some other vital equipment. Moreoever, with modern sealed-unit equipment, changing a relay set involves little more than unplugging one unit and plugging in another. In this sort of operation there must obviously be a strict code of practice and discipline when technicians are working in a relay room of a box which is still handling traffic, for one careless or thoughtless action could cause an accident. Technicians were responsible for derailing at least two passenger trains, one at Bethnal Green in 1964 and one at Bletchley in 1974 when their actions caused points to change under trains. Maintenance of electrical lineside equipment is also vital, for even a nut and bolt working loose by vibration and allowing point detector and control components to fall apart has been responsible for signalbox indications showing points correctly set with the relay interlocking in the right sequence for relevant signals to be cleared, when in fact the switch blades were lying set for a conflicting route, a major wrong-side interlocking failure.

One of the new types of equipment which formed an important adjunct of modern signalling was the automatic half-barrier (ahb) protection of level crossings, authorised to replace the traditional swing gates in certain conditions from the 1950s. Half-barriers are extensively used on the European mainland and reduce to a minimum the delays to road traffic since they are not linked with railway signals and are lowered automatically by the approach of a train. As originally designed for British conditions the fastest train could be no more than 24 seconds away when the road warning lights and bells started to operate to the time the train reached the crossing. The successful operation of automatic half-barriers depends very much on the discipline of the general public, and even today many do not realise that if anything obstructs the crossing — whether a stalled car or a slow-moving heavy goods vehicle — once the lights start to flash their warning, there are but seconds to clear the line, for nothing can stop the approaching train. Hixon crossing will go down in railway history as that which first jerked the public into the realisation that, as on the continent, they have to look to their own safety and not always rely on the railway to give them absolute protection.

On January 6, 1968, a massive transformer was being carried on a long low-loading road transporter lorry with two large tractor units, one at each end. The transformer was being moved to the English Electric depot at Hixon and had been authorised by a Ministry of Transport movement order and was even escorted by a police car. Its route lay across Hixon crossing, but nobody, not even the police, thought to telephone the supervising signalbox for permission to cross with their slow-moving load, even though they were instructed to by notices at the approaches to the crossing. As the transporter was half way over, crawling at low speed, the warning lights and bells operated, the barriers dropped — one across the transformer — and within seconds a Manchester-Euston electric express, travelling at 75mph sliced through the transporter. The 120ton transformer was hurled into an adjoining field, the locomotive and five coaches were destroyed and eight passengers and the locomotive crew were killed. The accident raised so many issues that a formal Public Inquiry, chaired by a QC, was held — the first of its type into a rail accident since the Tay Bridge disaster of 1879. The Report criticised practically everyone involved in the conception, planning, and installation of half-barrier crossings, right through the Ministry of Transport and British Railways, for not appreciating all the factors involved and particularly for the inept manner in which information on the use of the crossings had been disseminated. Subsequently, the timing sequence at such crossings was lengthened and with more complicated controls required to allow for the barriers to be held down if a second train was approaching in the opposite direction within a given time, the additional costs of installation made ahb equipment less attractive, and few have been installed since. Many other crossings have been modernised more recently with full barriers interlocked with signals, and controlled by a signalman, who might be some miles away but able to see crossing conditions by closed circuit television.

It is just about 100 years since the battle of the brakes was under way to find a system which was simple, powerful and continuous through the train. Moreover, it had to be automatic in action to the extent that if a train became accidently uncoupled the brakes would be applied automatically on both or all parts. Two systems eventually came into general use, the vacuum, in which a partial vacuum through the continuous brake pipe and the brake cylinders of each vehicle held the brake off, and the compressed air system, developed by Westinghouse, in which compressed air did the same thing. In either case if the train pipe was opened to atmosphere partially or fully through the driver's (or guard's) brake valve or in any other way, the loss of vacuum or the release of compressed air applied the brakes. The two types lived side by side on different railways until Grouping, but the vacuum system was then virtually standardised for steam trains, with a few local exceptions, although the Westinghouse brake was used for most electric trains. After Nationalisation BR opted to continue the vacuum system, but the higher speeds of the 1960s forced a change to the compressed air brake, which, with higher pressure differentials, gave a more powerful brake in more compact equipment than the vacuum system. The latter was limited to the difference between the maximum attainable vacuum and atmospheric pressure (about 14lb sq in), compared with the 75lb sq in of the compressed air type. The compressed air system had one feature not required on the vacuum type, a shut-off valve at the end of each vehicle, because of the necessity to close the train pipe, which could still be under pressure with the brakes applied, before uncoupling. When coupling locomotives to trains, or vehicles together, it is essential for the shut-off valves to be reopened, otherwise the brake will not be operative to the rear of the closed valve. There is a clearly prescribed routine for testing that the brake is operative throughout a train, which must be carried out before starting a journey or when a new locomotive is attached en route. The failure to carry out this elementary test has been responsible for a number of accidents in recent years when trains ran out of control simply because the brake was not working on all the vehicles in the train. The BR Rule Book is quite specific that it is the job of the train crew to make the brake continuity test.

At Darlington in December 1968 a Newcastle-Kings Cross express overshot the platform and was derailed at trap points, and it was subsequently discovered that the secondman had managed to couple what should have been incompatible brake hose couplings and had joined the locomotive train-pipe to the reservoir-pipe on the coaches when coupling at Newcastle, so that the brakes were not working on the coaches. A brake test would have revealed the fault immediately. More serious though are the dangers of brake failures on freight trains because of the heavier loads and the possibility of potentially dangerous substances being involved. Five runaway freight trains caused major accidents within ten months in 1971/2, because brakes were not acting throughout the train, and had not been properly tested before the start of the journey. On October 6, 1971, a train carrying steel components ran out of control when running down the long steep falling gradient from Beattock summit towards Carlisle. The brakes were not operating through the train because at least one shut-off cock was closed, and speed soon rose to levels described by witnesses as more than 80mph. The runaway soon overtook the preceding train, luckily a freight train, travelling at 35mph, and collided with it in what was one of the most destructive accidents in rail history in terms of wrecked stock; wagons and their loads of heavy steel components were flung in all directions and it took a week to clear up the debris. Astonishingly, the locomotive crew on the runaway survived, but the guard of the front train was killed. On January 8, 1972 a permanent way train carrying rails and powered by two SR electro-diesel locomotives was found to be uncontrollable when running on falling gradients between Three Bridges and Horsham, over-ran signals approaching the junction north of Horsham and collided with an electric multiple-unit train standing in the station. The brake pipe shut-off cocks between the two locomotives were found to be closed. On the following May 8, a freight train travelling towards Chester, which should have had some vehicles coupled to the locomotive brake, was being worked unbraked, and the train weight was too much for the locomotive to hold in check. It ran past signals at danger and into a dead end platform at Chester General where it collided



This high speed derailment of an up Hastings line diesel at Hither Green on November 5 1967 was caused by a track defect; this view shows how well modern all-steel rolling stock with buck-eye couplings can withstand considerable collision forces without collapsing or telescoping./British Rail

heavily with an empty diesel multiple-unit standing at the buffers; the dmu and the locomotive ploughed on to the platform, and the leading oil tank wagons were up-ended and badly damaged; the spilt oil caught fire and the resultant blaze burnt down part of the station and damaged another adjoining diesel multiple-unit.

An earlier runaway, on February 9, 1957, was not due to a lack of a brake test, for there was nothing to test, since the train involved was a loose-coupled freight with only the steam brake on the locomotive and the guard's hand brake. It was travelling from Buxton towards Chapel-en-le-Frith when a joint in the steam pipe to the driver's brake valve started blowing steam. A fitter had earlier tried to tighten the union nut forming the joint to stop the leak, but suddenly the joint fractured completely, scalding steam backed by the full pressure of the boiler erupting into and totally enveloping the cab. The train had been climbing and the regulator was open; as the pipe burst, it had just reached the top and began to dip on to falling gradients. The crew fought to get near the regulator and managed to partially close it with the fire irons, but the engine was still under power and without a brake. The driver told the fireman to jump off and try to pin down some of the wagon hand-brakes, but the speed was already too high. The driver, John Axon, stayed in the cab, still desperately fighting to shut the regulator or to get at the reverser, but he could do no more in the face of so much scalding steam, and he was unable to prevent a collision with a freight train ahead in which he was killed. He was posthumously awarded the George Cross for bravery, and the story of his action has passed into railway lore, both in narrative and ballad.

Any locomotive defect is potentially dangerous because it is usually at the front and can jeopardise the safety of the whole train. Engineers often refer to tolerances in terms of thousandths of an inch, and it was but a few thousandths of an inch which led to the derailment of a Liverpool-London express at Weedon in September 1951 when a locomotive bogie wheel axle-box, binding in the horn blocks, jammed with the wheel flange just near the top of the rail on a curve, so that the wheel rode over the rail; the locomotive was derailed and most of the train with it killing 14 passengers. It was not a defect as such, but an insecure battery box door which led to the deaths of ten passengers in a derailment at West Ealing in December 1973. The locomotive, a Western class diesel, had been in Old Oak Common depot for attention but the battery box door, with a bottom hinge, was simply pushed up into position and not locked. A loose swivel catch, designed to drop automatically, held tight and did not support the door. As a result, soon after leaving Paddington with a train for Oxford, the door dropped open and was held projecting horizontally by its stays. Like this, it was outside the loading gauge and struck the platform ramp at Ealing Broadway station with such violence that the stays were torn off and the door then dropped to hang vertically outside, but below, rail level. At the next crossover, with the train now travelling at 70mph, the door struck point rodding between the point motor and the switch blades, forcing the blades open between the locomotive bogies, with the result that the rear of the locomotive was suddenly diverted to the right and the train followed into derailment, with the locomotive slewing on to its side and coaches spreadeagled in a zig-zag across all four tracks. On such a heavily-trafficked, high-speed line, it was fortunate that no other train was in the vicinity.

Track defects are also potentially dangerous, particularly rail breaks and especially breaks at rail ends of jointed track where pieces of rail can disintegrate if cracks are not detected early enough. Continuously welded rail, often in lengths of a mile or so, obviates the joints and their dangers, except at its own ends, and if breaks occur in a welded length they are usually clean through; on track circuited lines they are self-detecting since they interrupt the track circuit to show up on a track diagram and hold the relevant signal at danger. Rail-end breaks might only affect a piece off the top of the head and track circuits are thus unaffected. The most serious accident arising from a broken rail was undoubtedly that at Hither Green on November 5 1967 when a Hastings-Charing Cross diesel-electric multiple-unit was derailed with the loss of 49 lives. The accident revealed that standards of maintenance on the Southern were not up to the speeds or volume of traffic the line was expected to carry. The Inspecting Officer recommended quicker installation of continuously welded rail on lines carrying heavy traffic.

Wagon defects in the 1960s led to an alarming increase in the number of freight train derailments, particularly short-wheelbase wagons under 15ft long, which proved to be unsuited not only to the higher speeds of diesel and electric traction, but also to the more intensive use arising from the running of block trains, reduction of marshalling yards, and quicker turnrounds, so that return journeys were measured in a few days rather than weeks. Many defects were found to stem from maintenance methods and schedules established over many years which were quite acceptable for the steam age but totally inadequate for a modern railway system. The danger of these freight train derailments was the potential hazard to trains on adjoining tracks. While the worst fears were happily not realised, some passenger trains were nevertheless involved in collisions with wreckage, the worst being a down Kings Cross-Edinburgh train at Thirsk in July 1967 in which seven passengers were killed and the experimental locomotive DP2 wrecked. Gradually causes were identified and by improvements in maintenance, strict enforcement of speed limits and replacement of older wagons by new designs, the total number of freight derailments was brought under control in the early 1970s. Even so, some of the latest bulk carrying wagons have caused problems, especially when empty, with stiff suspensions that have difficulty in coping with certain track inequalities.

Whatever mistakes are made by other operating or maintenance staff, there is no doubt that in the final event, until such time as all trains, and not just those on London Transport's Victoria Line, have full automated driving control, the man at the front in the driver's seat must carry the ultimate responsibility for controlling the train safely throughout its journey. Yet until recent years, compared to advances in aids to signalmen, drivers were given scant assistance with automated equipment to help in the observation of signals or to regulate train speeds through restricted sections. While signalmen have had the benefit over many years, first of interlocking, then track circuits, block instrument locking, and, today, on many lines, fully automated track-circuit block, with automatic train describers and centralised power operation, drivers have had only one device, the automatic warning system (aws), originally developed by the GWR as automatic train control as long ago as 1906 but still today, in its modified BR form, not yet installed on all lines. Indeed, even in recent years its use seems to have been grudging, for the speed of installation on track and motive power units has not been rapid, and today, where it could be of immense help at permanent speed restrictions, or temporary speed restrictions for engineering work, it is only very selectively applied. It is astonishing just how much reliance was and still is placed, both by the former railway companies, BR and the relevant government department concerned with rail safety, in drivers' route knowledge and skill in controlling trains safely, without the benefit of automated safety devices for so long. That does not decry the need for knowledge and skill, but at today's high speeds, a moment's inattention, perhaps a driver distracted by events in the cab with ancillary equipment, could mean missing a signal, or a fatal few seconds delay in a brake application. With today's 125mph trains, a 10 second delay in making a brake application can mean several hundred yards difference in starting to slow down.

Even though BR was already experimenting with electro-magnetic aws in 1952 in contrast to the GWR's electro-mechanical pattern, the double collision at Harrow & Wealdstone, with its massive death toll, had occurred before it was decided to adopt it on most parts of the system. At that time the Southern third rail had curious side effects on aws so that it was not then practical for SR use and the Southern preferred instead to expand its colour-light network of signals, ideal it was thought for poor visibility. But they did not stop the St Johns, Lewisham, disaster in 1957 when a steam-hauled passenger train ran unchecked past two colour-light signals at caution and one at danger in fog, not only colliding with a standing train ahead but also bringing down a massive girder bridge to compress the wreckage and killing 90 passengers. In 1969 the SR had another collision, at Marden, when an express electric train ran past a colour-light signal at danger and collided with a parcels train in fog. All these accidents would have been unlikely with aws. Yet aws is not a prevention but an aid, for if a driver acknowledges a caution indication and fails to act correctly thereafter, an accident might still occur. In semaphore areas aws is not applied to stop signals. On the London, Tilbury & Southend line in January 1958 after passing a distant signal at caution a train correctly slowed down for the home signal at Upney, but was then allowed forward to the starter. According to the signalman the starter was at danger, but the driver thought it was clear and carried on. He then received clear aws indications at the next signals, including Dagenham East down distant, but this signal was still clear for the preceding train. In the fog the second train caught up and collided with the train ahead, smashing the rear wooden-bodied coaches to matchwood and killing 10 passengers.

The safe driving of a train is dependent on three factors, first the correct presentation of information to a driver, second the correct interpretation by the driver of that information and, third, the correct action by the driver, particularly if the train has to be slowed down or stopped. Any break in that chain, including any delay in interpretation or action, can lead to disaster. The unconscious cancellation of aws and failure to brake in time or at all is an example of the final stage. Unconscious aws cancellation has been linked to a state of unawareness, rather like a car driver who can negotiate all the hazards of a busy street and not remember any feature of the journey even seconds afterwards.

At Didcot Milton Junction in November 1955 the driver of a Britannia class Pacific must have acknowledged an aws warning without realising it, and missed a distant signal which was at caution, for the train was signalled to be switched to a loop line just beyond the home signal through a turnout with a 15mph speed limit. The train entered the loop at nearer 45mph and the locomotive and leading part of the train crashed headlong down an embankment with the loss of 11 lives. Didcot was the scene of another excessive speed derailment 12 years later when a down passenger train travelling on the down relief line approached Foxhall Junction at about 60mph instead of the permanent 25mph limit required by the crossovers to the down main, for the down relief line comes to an end at this point. The driver had overlooked the restriction and there were doubts about his knowledge of the relief line at the junction. The colour-light signals approaching the crossovers displayed unrestricted green aspects because the route was the only one that could be taken by passenger trains, the line ahead continuing only into Didcot Power Station. Certainly total reliance was placed on driver's route knowledge here, for the signalling at that time gave no help in reminding a driver of the restriction.

It is in the field of speed restrictions for other than signalling reasons that drivers have had least assistance. Of the grouping companies only the LNER generally provided reminders of permanent speed restrictions by means of lineside signs, usually stencil figures erected near the start of the section concerned.

BR eventually adopted this method of indicating restrictions on the remainder of its network, but the signs were placed at the start of the restriction and not at normal braking distance from it, so that if a driver had overlooked a restriction, by the time he saw the limit figures it was too late to take effective action. It took several high speed derailments — Sutton Coldfield in January 1955, Wormit in the same year, Lincoln in 1962 and Morpeth in 1969 among them — before the Ministry of Transport Inspecting Officers were finally convinced that an advanced warning of speed restrictions was desirable. Even now, such warnings are only applied to high speed lines where the line limit is 75mph or over, and then only for limits of two-thirds of line limit or less. Illuminated permanent signs are provided, accompanied by an aws permanent magnet to give a caution indication in the cab. Yet the derailment in June 1972 in the London suburbs at Eltham amply showed the carnage that can be caused if a 20mph restriction is taken at the line limit of 60mph.

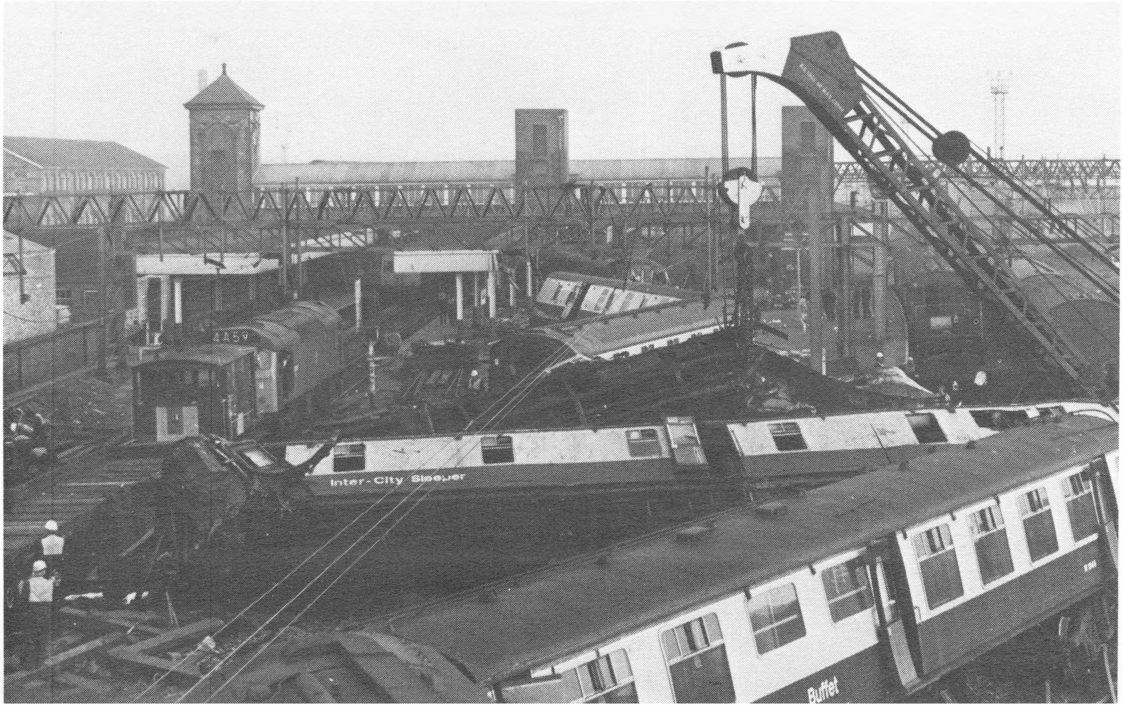
Temporary speed restrictions for engineering works have always been marked by advanced warning boards and by boards at the start and end of the restricted section. Even though they are so variable in location and speeds, they have not been accompanied by aws. Drivers are usually given printed advice of such restrictions beforehand, but the lineside boards, in the final event, are the markers by which the driver must abide. The high speed derailment in June 1975 at Nuneaton showed the potential of a missed warning board on a 100mph main line. The accident happened at night and the advanced warning board lights had failed and were unlit. Other railway administrations in

Europe use aws warnings for temporary speed restrictions because of the very real danger of an accident if a speed restricton is overlooked. The Nuneaton derailment inevitably focussed attention on the whole procedure for advising drivers of temporary restrictions and whether the lineside hardware is suitable for the high speeds of the 1980s. It would hardly do for an Inter City 125 unit travelling at 125mph to be upended because the driver did not see that most Victorian of railway relics, the oil lamp, at an advanced warning board. True, gas and electricity are also used, but gas lamps at Nuneaton do not seem to have been fail safe. The official report of the Nuneaton accident recommended high visibility warning boards, better lighting and aws caution magnets — but only on lines already so fitted generally. As little more than a third of the BR network is so equipped, inconsistencies will be rife.

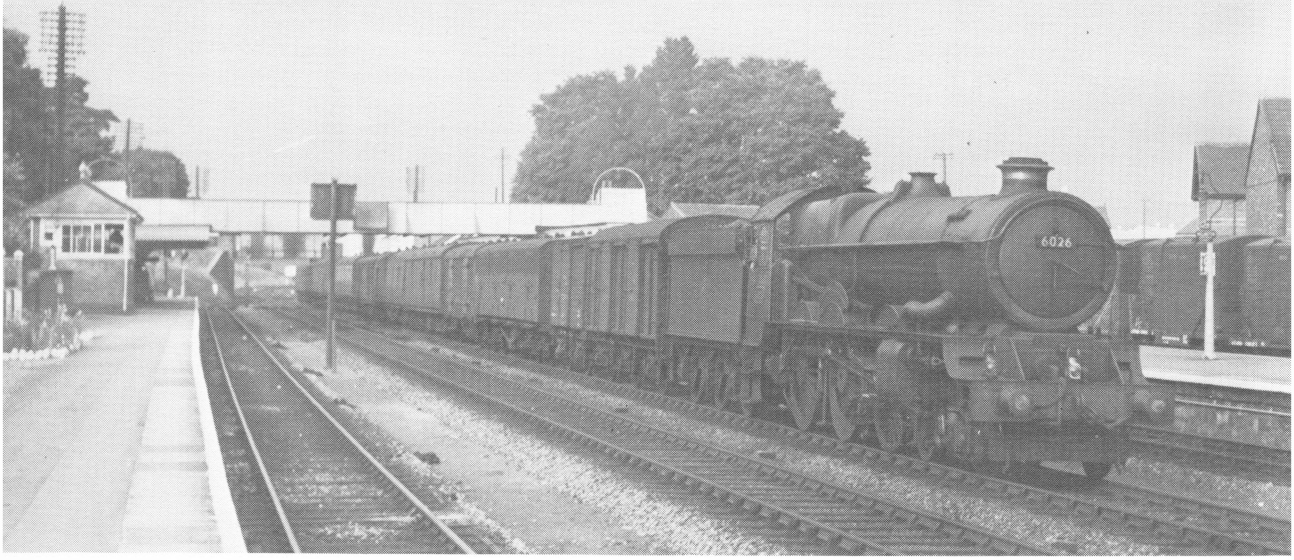
As for the tunnel-end collision at Moorgate on what was then London Transport's Northern Line tube in February 1975, surely a driver must be relied upon to stop a train at a terminus station. There are occasional light buffer stop collisions caused by brake mismanagement, but nobody could foresee a full-speed collision by a loaded passenger train running into a dead-end tunnel wall with no apparent attempt to slow or stop whatsoever. Inevitably, the driver perished with 42 passengers and the reasons will never be known, for there was no apparent fault on the train nor, as far as could be established was the driver incapacitated. Lt Col I K A McNaughton, the Chief Inspecting Officer of Railways, was determined that it should not happen again and recommended the most stringent automated speed monitoring and checking devices to take control out of the driver's hand if a reducing speed level is exceeded as an underground train approaches a dead-end terminus in future.

We have focussed attention on certain individual accidents and major safety devices, and inevitably there are some criticisms of safety gaps which still appear to exist. But we must look at these in the light of the safety record and against the expenditure which would be needed for more, or even total, automation. Despite some alarms — the sudden spate of short wheelbase freight wagon derailments for example — the safety record over the last 30 years has shown impressive progress. Around Nationalisation collisions between trains occurred at the rate of 0.4 per million train miles. Today it is around 0.1, just a quarter of 1948, and the result of signalling modernisation and aws, despite traffic concentration on fewer routes, and higher speeds. As we move into the 100mph plus speed era more developments in signalling and driving automation are not far away. Already signal repeating aws, in which the actual aspect of a signal is displayed on the driver's control desk, has been successful, and transponders, transmitting packaged information at specific locations into the driving cab as a train passes over the track equipment, are under trial. Continuous cab signalling — even a measure of automated driving control — is possible. Time alone will show how much these new devices will cost, and experience in the ultra high-speed era will show whether they will be needed or can be justified for the 125-150mph speeds of the 1980s, to prove that the line really is clear.

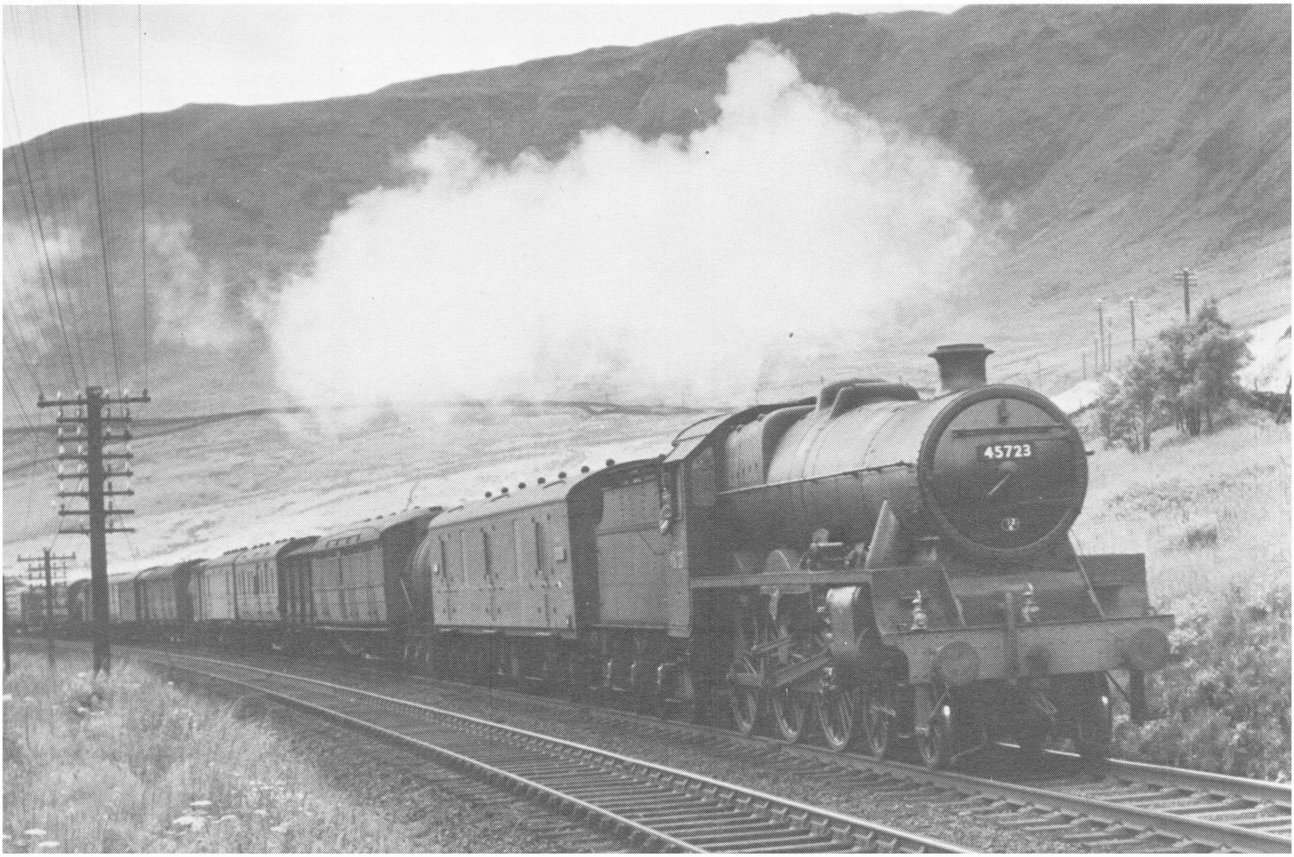
Failure to observe a temporary speed restriction for permanent way work after a warning board was left unlit caused the highly-destructive derailment at Nuneaton on June 6 1975. As a result of this accident, the methods of illuminating speed restriction signs have been revised, and they will in future be supported by AWS warnings./R. J. Lowe

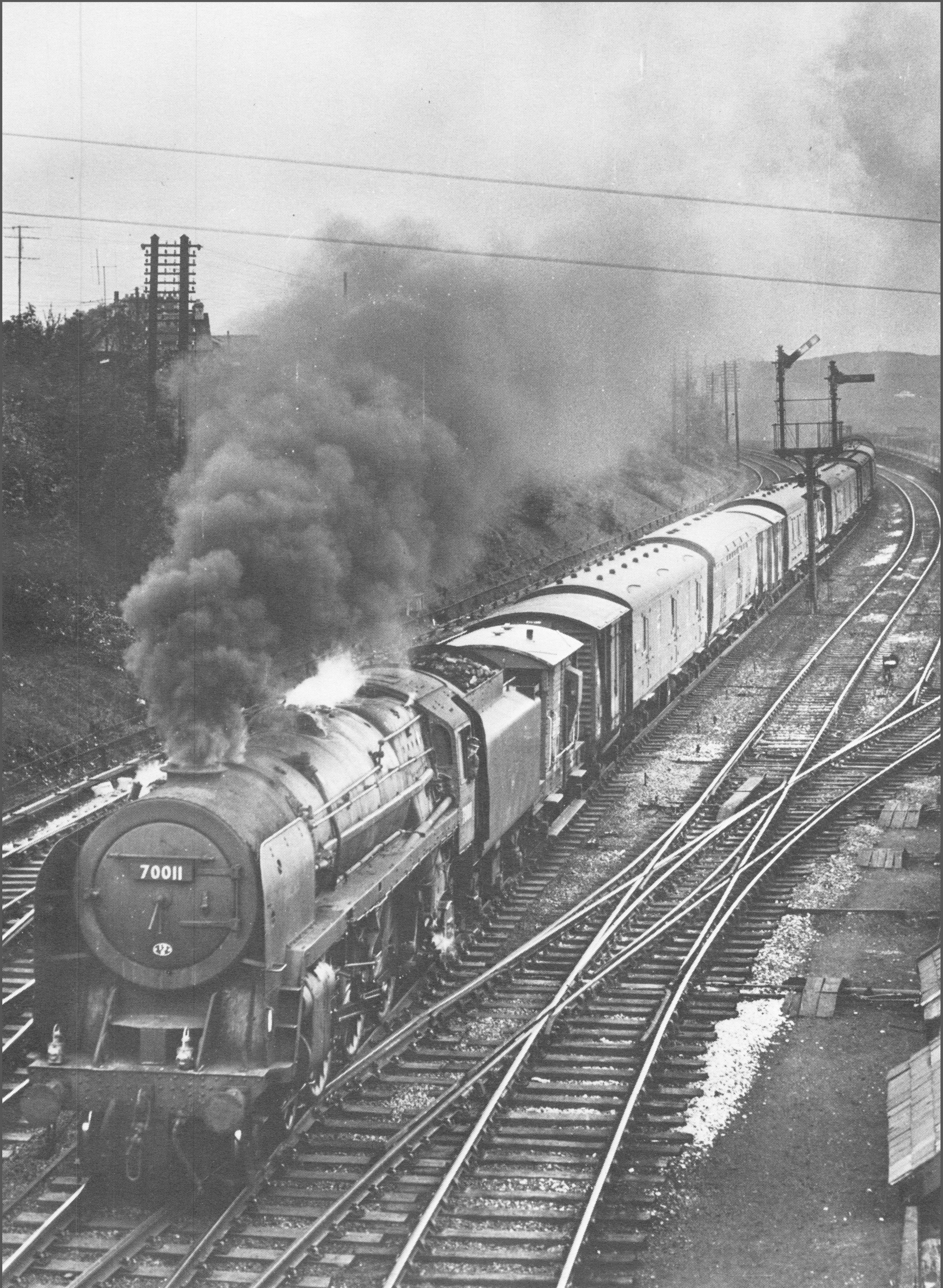


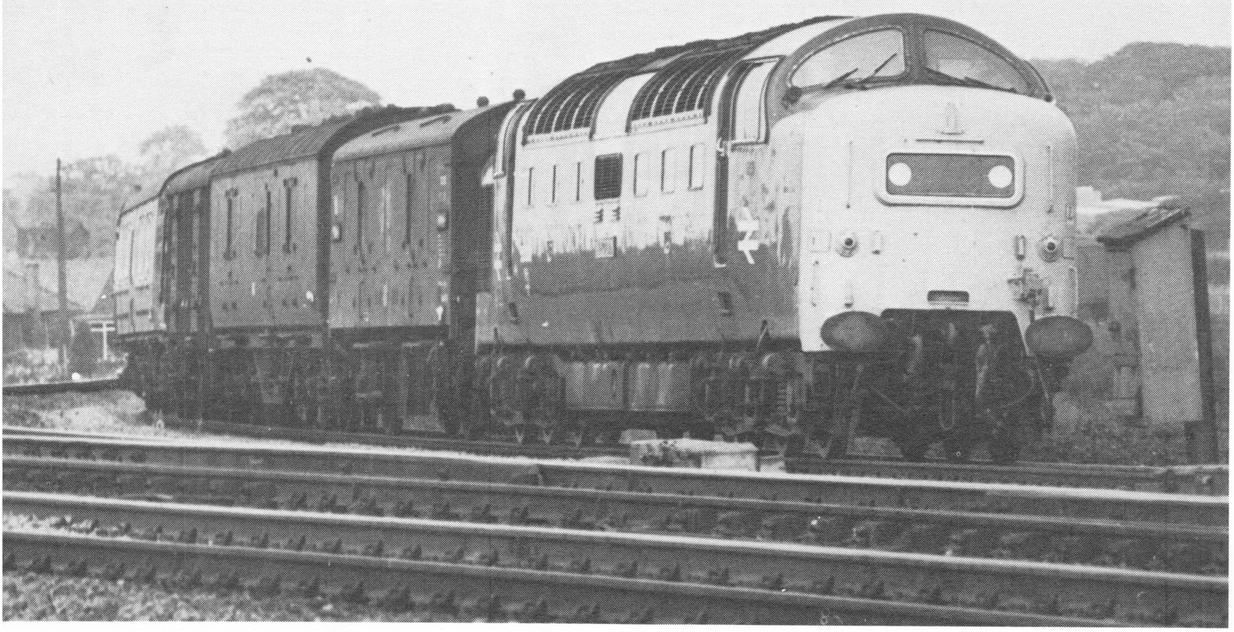
Parcels Parade



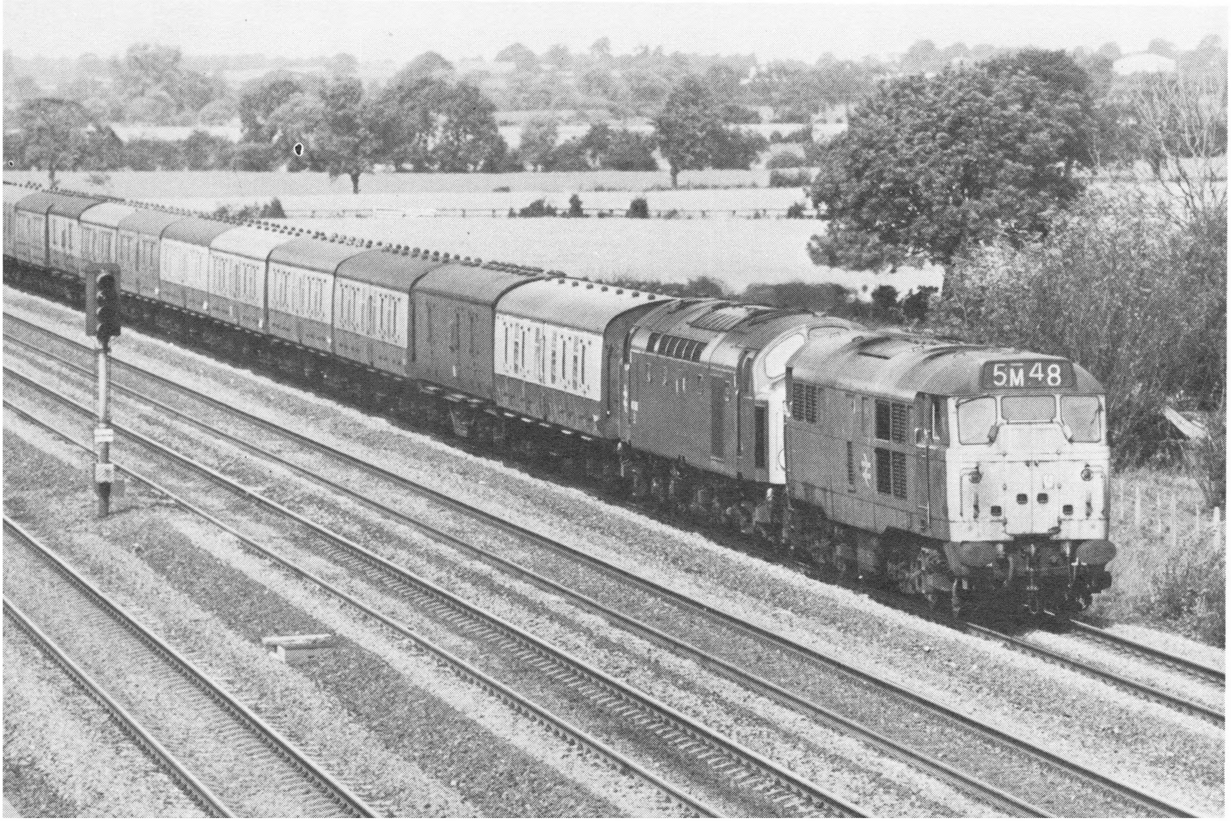
Royal Mail traffic has been an important source of revenue for railways for well over a century. So it is fitting that the 15.48 Bristol-Plymouth parcels should have no lesser personage than ex-GW King class 4-6-0 No 6026 King John *at its head (*above*) as it hurries through Wellington on August 4 1955. And as if to emphasise the old tradition that the mails must get through at all costs, the lengthy 00.02 Birmingham-Carlisle Parcels has ex-LMS Jubilee Class 4-6-0 No 45723* Fearless *in charge as it climbs towards Shap near Dillicar troughs (below) on July 10 1958. The nameplates of Britannia Class Pacific No 70011* Hotspur *have been removed (*right*) as it gets a clear road through Oxenholme with a northbound parcels train on May 15 1965.*/Peter Gray; J. E. Wilkinson; Gerald T. Robinson

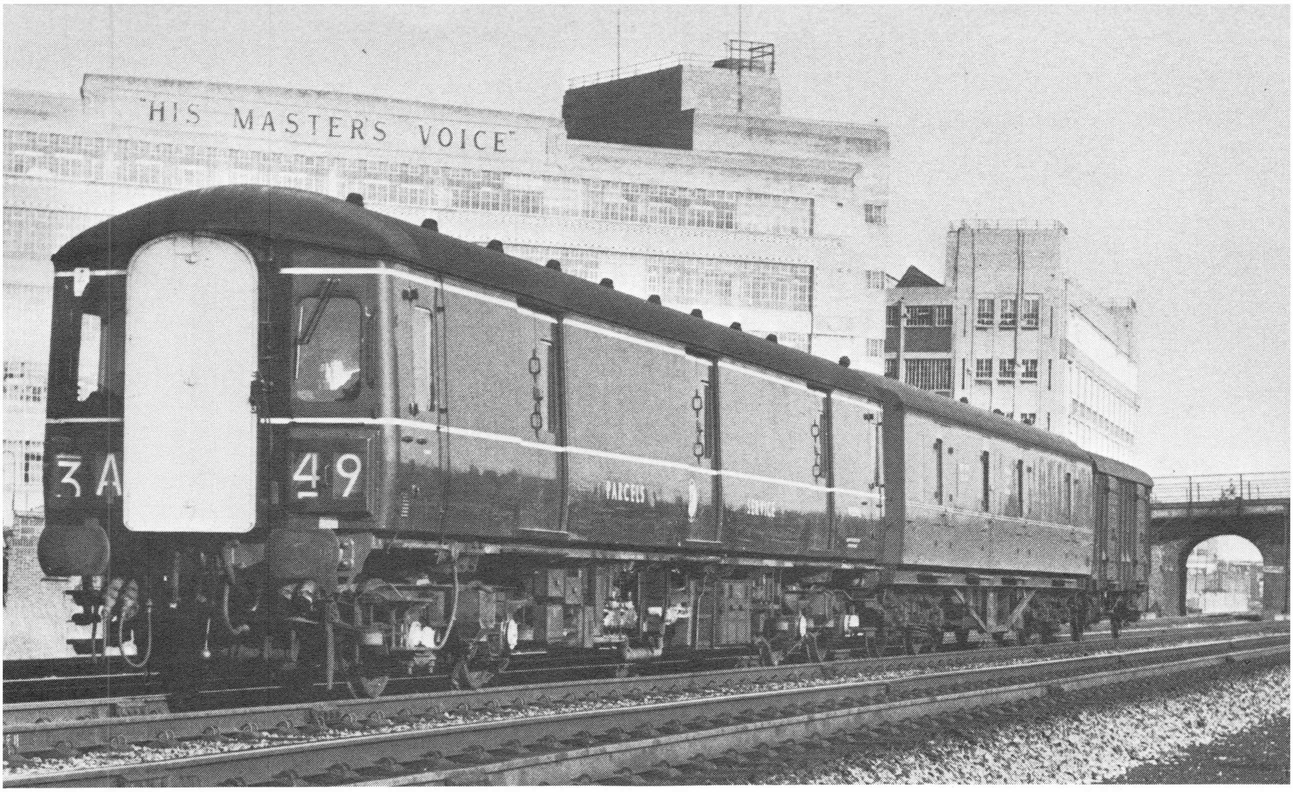



70011

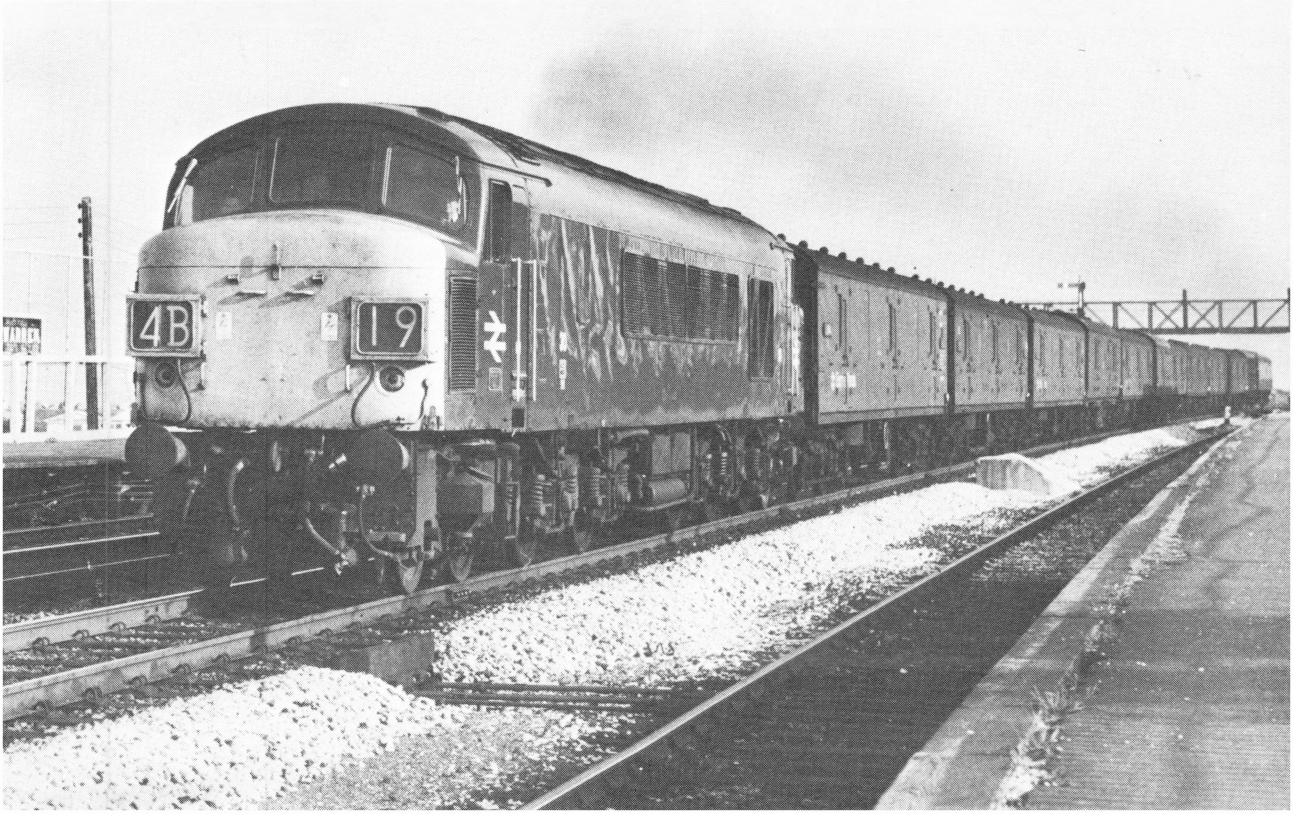


Power plus for parcels! Deltic Class 55 No 55009 Alycidon *brings a mail train from Teesside and the Durham coast round the curve and on to the main line at Northallerton one day in September 1976* (above) *whilst a little further south at Alne, Class 31/1 No 31297 is piloting Class 40 No 40088 at the head of a Heaton-Red Bank parcels train on August 23 1975.*/Rodney Wildsmith; John Oxley



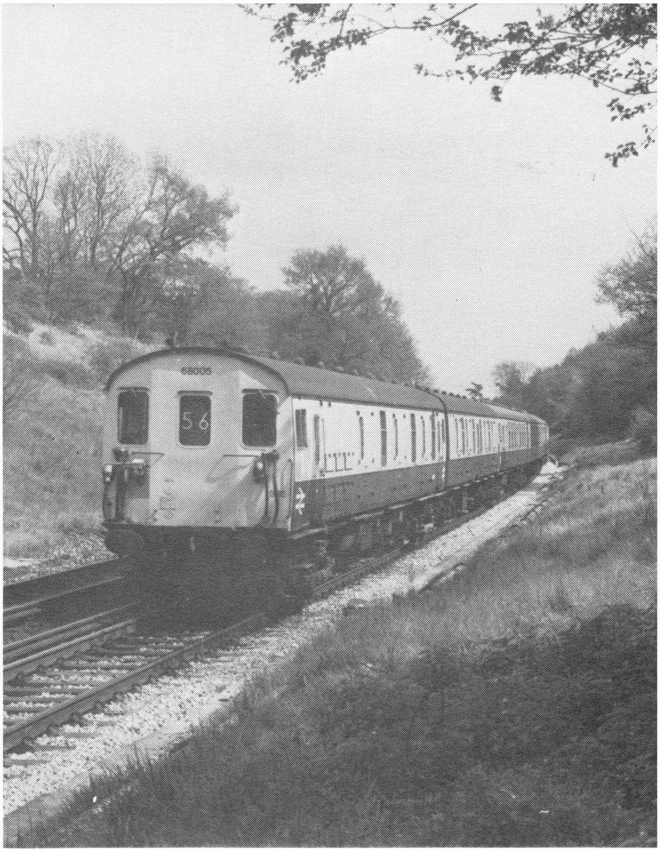


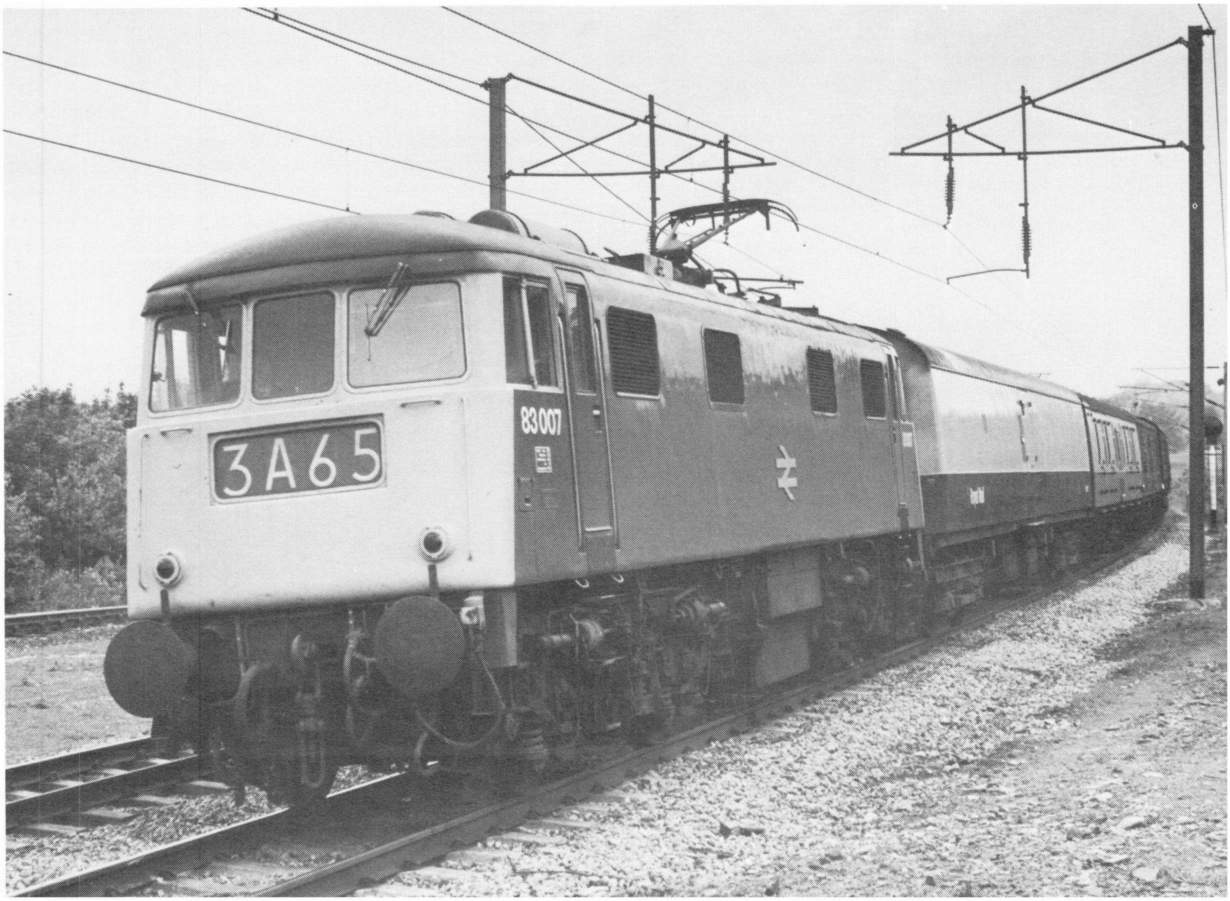
The widespread introduction of diesel multiple-units in the late 1950s caused problems with mail traffic because of their restricted van space, so several purpose-built motor parcels vans were provided, and these have been further augmented in recent years by the conversion of some single-unit railcars. One of the Gloucester-built motor parcels cars hurries past Hayes and Harlington with two vans in tow (above) *on October 19 1963. Nowadays, British Rail promote their parcels services as 'Rail Express Parcels', and several of the vans in this up parcels train passing Dawlish Warren in Summer 1973* (below) *behind Class 45 No 30 carry the Express Parcels logo.*
/Brian Stephenson; Alan Bryant



C3

*The spread of electrification has brought problems too, for the timetable planners don't like the lengthy station stops sometimes necessary for parcels work. The Southern Region, in addition to using multiple-unit stock — sometimes to the detriment of the passenger accommodation — uses its versatile electro-diesel locomotives or motor luggage vans. One of the former, Class 73 electro-diesel No 73134 sets out past North Kent West Junction (*left*) with a Bricklayers Arms-Brighton parcels on August 6 1974, while one of the latter, Motor luggage van No 68005 leads a trailer van and a CEP/BEP formation up Hildenborough bank (*right*) on the 14.05 Ramsgate-Charing Cross on May 12 1973. Built mainly for use on boat trains, the motor luggage vans have traction batteries to enable them to work over unelectrified quayside lines at Dover and Folkestone. Another electrified system to use motor parcels vans was that on North Tyneside. Not long before electric services were withdrawn, a brace of vans stand in the parcels dock at Newcastle Central (below left) on January 5, 1967. Some long-distance mail trains are now scheduled at virtually express passenger speeds, and the sorting van behind Class 83 No 83007 as its speeds past Oxenholme (*below*) with the up postal on June 11 1974 is fitted with the latest B4 bogies.*
/J. Scrace; Brian Morrison (2); I. S. Carr





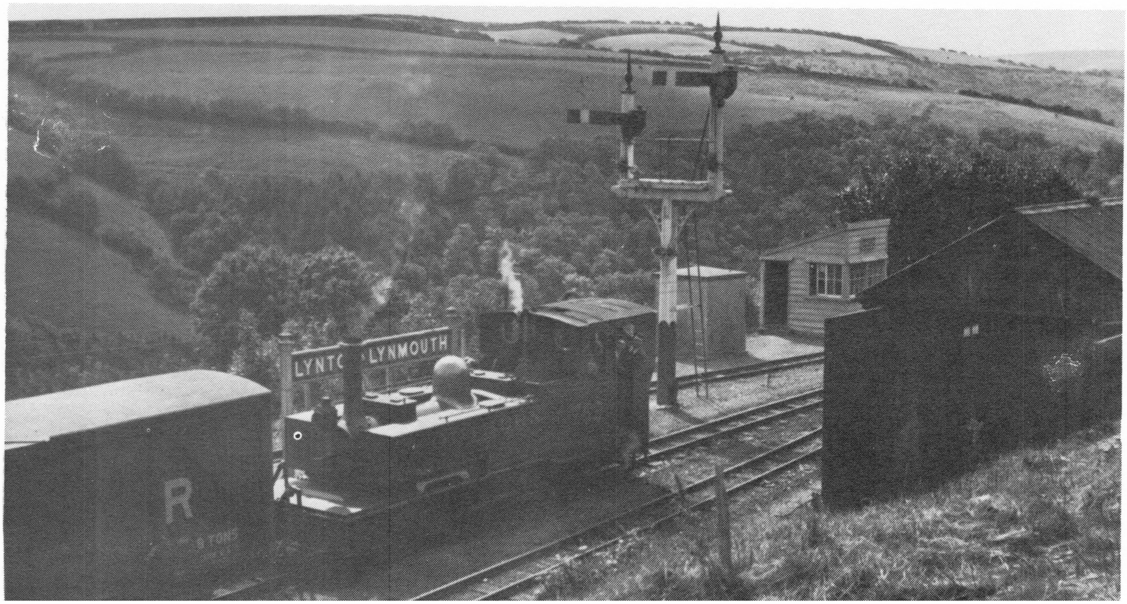
Along the Dotted Line

Victor Thompson

Tracing a railway line is an exercise that is at once both interesting and depressing. Rather like waking up on your birthday to read a memorial notice to an old friend. But there is satisfaction in turning the dotted line on an Ordnance Survey map into a road bed. There is an unexpected thrill in picking up the route once more after everything seemed to disappear beneath tarmac or budleia. There is the melancholia of a shallow cutting taken over by a riot of green where only the ever-present ballast reminds you that whistles blew here. And there is the irritation of being overtaken and invaded by a noisy crowd of sponsored walkers, all making money along a route which no one was prepared to help when it became the poor relation to the family car. There are the indignities, too, of buried track out of sight, perhaps part of a car park or under the waters of a lake; and sometimes with no other headstones than a jumble of mattresses filling a cutting.

Tracing the old Lynton and Barnstaple narrow gauge line presents more difficulties than most, for it was one of the earliest closures on record. Although completed in 1898, by the middle 1920s the breath-taking scenery at Lynton and Lynmouth was outmatched by the breath-taking climb to the station. It was something to be enjoyed by the new fangled car or bus. Farm produce and the occasional item of machinery was still railed between remote hamlets along the fringe of Exmoor, to Chelfham, Bratton Fleming or Blackmoor Gate. But the road services increased and the shopping baskets of the regulars decreased. By 1935, the Southern began to do its sums, estimated the costs of bringing up its infant prodigy with budgets more suited to standard gauge trousers, and decided it was time the line either earned its own living or retired.

Now, in 1935, no one had thought of railway preservation or conservation, because it hadn't yet dawned on most folk that railways could ever be anything but very permanent ways. Surely people came in for the last run, but not in vast, protesting crowds. There's a film, showing them happily waving from the departure bay of Barnstaple Town Station or poking heads out of coach windows with the confident grin of those convinced that officials were bound to find an extra batch of unused tickets next week to allow everything to go on running. Or maybe it was a bit of sheepishness, realising too late that they hadn't supported the line for years. Anyway, off went the little train, double-headed for the first (and last) time for years. On film, it slogs up across Parracombe bank, disappearing behind clouds of smoke, leaving only the cameraman to share the sense of drama with the station-master at Chelfham as he solemnly reset his signals to 'Line Closed' and padlocked his cabin for the last time. A final shot shows the bleak legend across the timetable: SERVICES CANCELLED.



Ex-Lynton & Barnstaple Railway 2-6-2T No 759 Yeo *waits at the picturesque but inconvenient station at Lynton & Lynmouth for the return trip to Barnstaple* (below)*, during the course of which it calls at Bratton Fleming* (above right) *in the summer of 1934.*/A. B. Macleod (2)

The Southern auctioned off the whole thing with the indecent haste they held for orphans. There wasn't even a work-shop for them to go to. Little *Exe, Lyn, Taw* and *Yeo* fetched just £40 apiece. *Lew* went into exile in Brazil. The family dishonour had been wiped clean.

Right up to 1970, Barnstaple Town Station kept a fair pretence of being a railway station — until the prime reason for its being there, the Ilfracombe traffic, disappeared with the final remnants of the service. The Lynton bay had long since been crowded out by a car park and a multi-storey Civic Centre straddles the old route out and along Rolle Quay. After abortive attempts to save the line, the Ilfracombe rails finally came up in 1976, the vandals were in, the glass in the canopy came down but, surprisingly, the narrow-gauge level crossing gates at Pilton remained, still rusted back to the walls. They even enjoyed a brief moment of glory when the local paper ran a photograph and caption promising a face-lift and transfer to civic duties elsewhere. Which, after 40 years of redundancy, must say something for 19th century joinery!

The first fatality on the line occurred here when the crossing keeper was run down by a passing train; the second came just weeks later when a ballast wagon ran out of control over an embankment, killing two of the four men travelling on it.

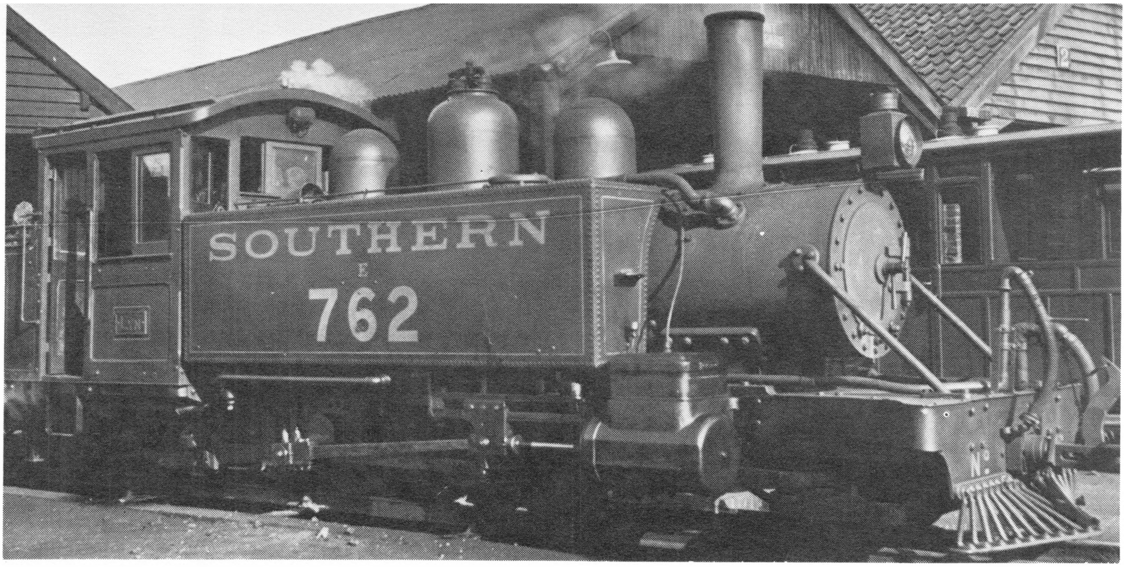
Opposite, the former work-shops have become a tourist attraction — as a Sheepskin and Woolcraft centre!

Half a mile on, the parapet of a road bridge sticks up quite senselessly from a levelled waste on the edge of a council estate. The shallow cutting is now buried, reinforced with a litter of bins and bedposts right up to the archway. Only a week after our trace, a couple of JCBs excavated the spoil, but this exciting industrial 'dig' merely put in the sewage and levelled the ground once again — a unique example of a drain that went down the railway!

Old telegraph poles still prick out the route. They stride the open valley fields right up to Snapper, then duck into the trees just below road level. The old platform hut seemed to be someone's garden shed, but a dog with the bark of the Baskervilles kept us from asking questions! One of the L&B coaches was abandoned here for hens to peck, boys to climb and, during the war years, for evacuees to live and dream in, turning the view through the windows to Hampstead Heath. Incredibly, to-day, after much renovation, it plies the Festiniog Railway as coach No14, reconstructed as a Buffet and claiming to be the only one in Great Britain serving draught beer. There's no cider, but signs of its previous existence remain in the brass ash-trays still stamped 'S.R.'.

Towards Chelfham, the line on the left of the road was gone, suddenly, apparently without trace. We parked the car in a lay-by where a ridiculous wall a foot high separated the gravel from grass. We picked up those friendly poles again, a 100 yards away but on the opposite side of the road; a depression in the tarmac showed where another cutting had been filled in and the road built and settled across the top. When the trains ran, the road had looped off across a bridge where the car now stood, and that little wall was all that remained of a parapet, left perhaps by navvies with a touch of sentiment.

The route, now on the right, climbs steadily to gain Chelfham viaduct, but there's no easy way for trains or motorists. We footed the climb and just where the track buried itself in the fringe of a wood, stumbled over masses of yellow brick matte with moss. Then suddenly, we were in sunlight again and the viaduct stood ahead, curving to the left in a series of 'dog-leg' bends common to narrow gauge. Only a commando could scale the barriers and barbed wire which now bar the way; one wonders if indeed such forces did the job, for the Army wanted the bridge for demolition practice during the war, but changed its mind when it realised the houses below made the scheme



Odd man out: the stovepipe chimney, triple domes and cab all reveal the American parentage of Baldwin-built 2-4-2T No 762 Lyn *(above) at Pilton in summer 1934. In the last winter of the line's existence, 2-6-2T No 761* Taw *threads the outskirts of Barnstaple* (below) *with a mixed train for Lynton early in 1935.*/A. B. Macleod; Donovan E. Box

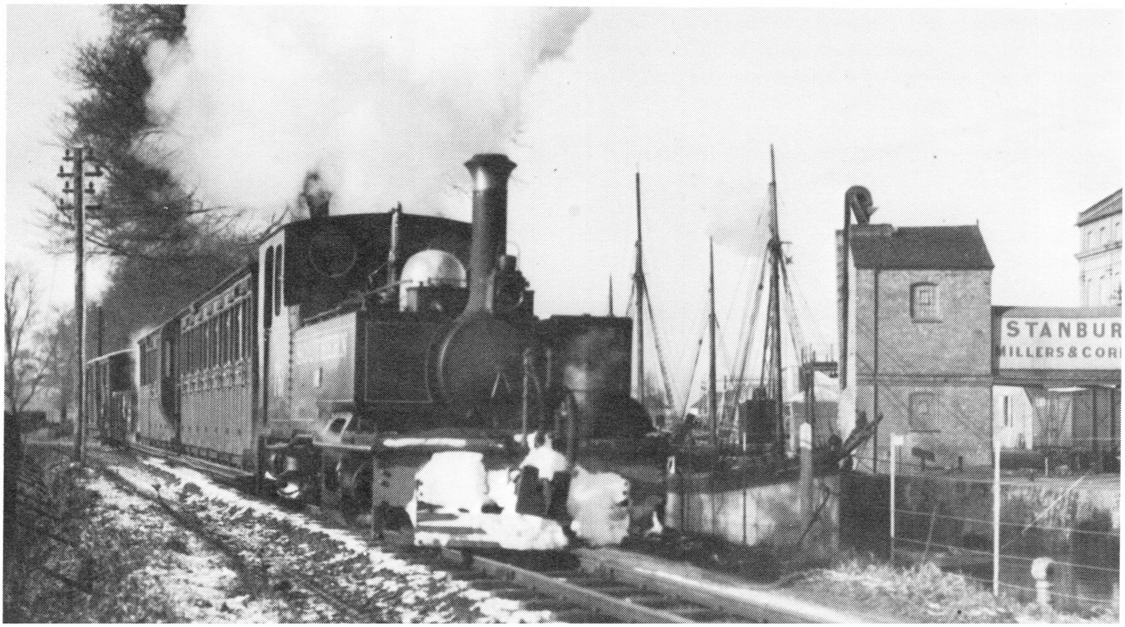
impracticable. The parapet has gone, for safety reasons, and that explained those piles of yellow brick back along the route. The film shows a train crossing Chelfham, with only the chimney marking its progress behind that tall parapet.

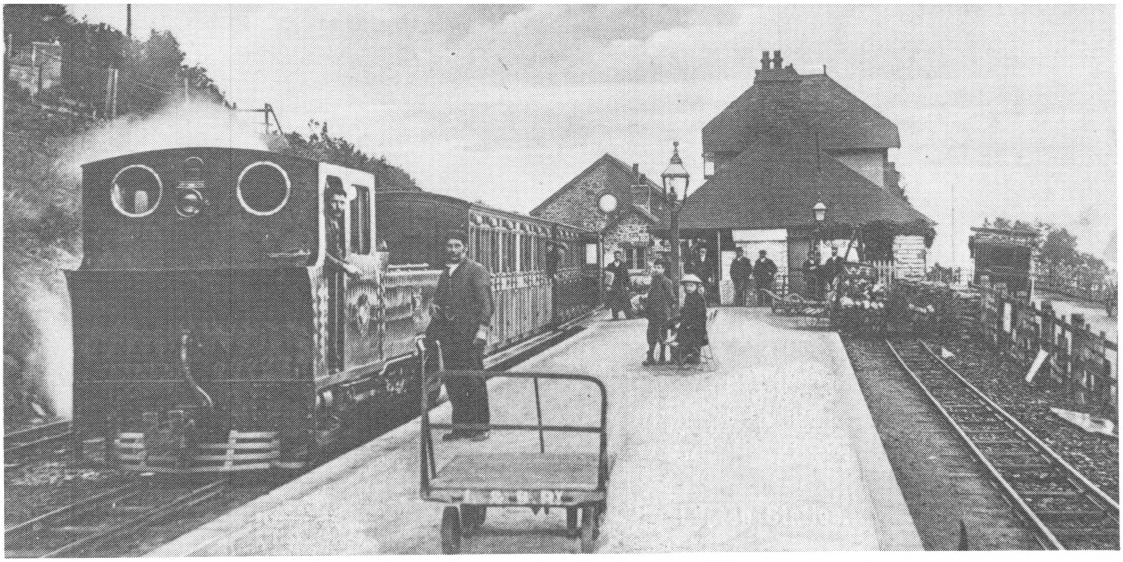
The station house at Bratton Fleming still uses the old wagon-drive and the smaller entrance for passengers, both of them now ending down in the garden. But brick kerbing at the back of the house marks the edge of the old up-platform. Resident Harry Skinner invited us into a kitchen as big as a waiting room to show us photographs of farm families with market-day baskets just off the train. One old postcard, all hand-tinted, showed a fair-sized box Harry remembered. "Rabbits for Manchester. Regular trade". Says he. Without myxamatosis!

Between Bratton and Blackmoor the old route's been drowned at Wistlandpound. To make up for it, a sign at the crossroads proclaims the Cafe as the former stationhouse, which might add to its popularity as a refreshment-stop.

You get used to the constant usurpation of the railway by roadway. It's no surprise to find the old track to the left of you once more, dropping down to the horse-shoe curve of the bank at Parracombe, part of which was washed away in the disastrous floods which rolled on down the valley to take cottages at Barbrook and hotels at Lynmouth in the early 50s.

Then its uphill again past Parracombe church, the four faces of which came successively into view as the train wound its way to Woody Bay. Sir George Newnes, head of the famous publishing house, had the station put here mainly to serve the hotel just behind it; he was a resident and local benefactor of Lynton,





Two contrasting views of Lynton Station; there are almost as many staff as passengers about (above) *as 2-6-2T* Taw *(numbers were not allocated until Grouping) poses for the camera in June 1916, whereas there hardly seems enough platform space to cope with the throng who turned out to ride on the last train on Sunday September 29 1935* (below)*. To the last, the line was maintained to main line standards, and this perhaps unnecessary requirement undoubtedly contributed to the heavy operating costs which brought about the line's premature demise.*/Ian Allan Collection; R. L. Knight

and proposed the chalet-like lines of the station buildings to match the North Devon hills.

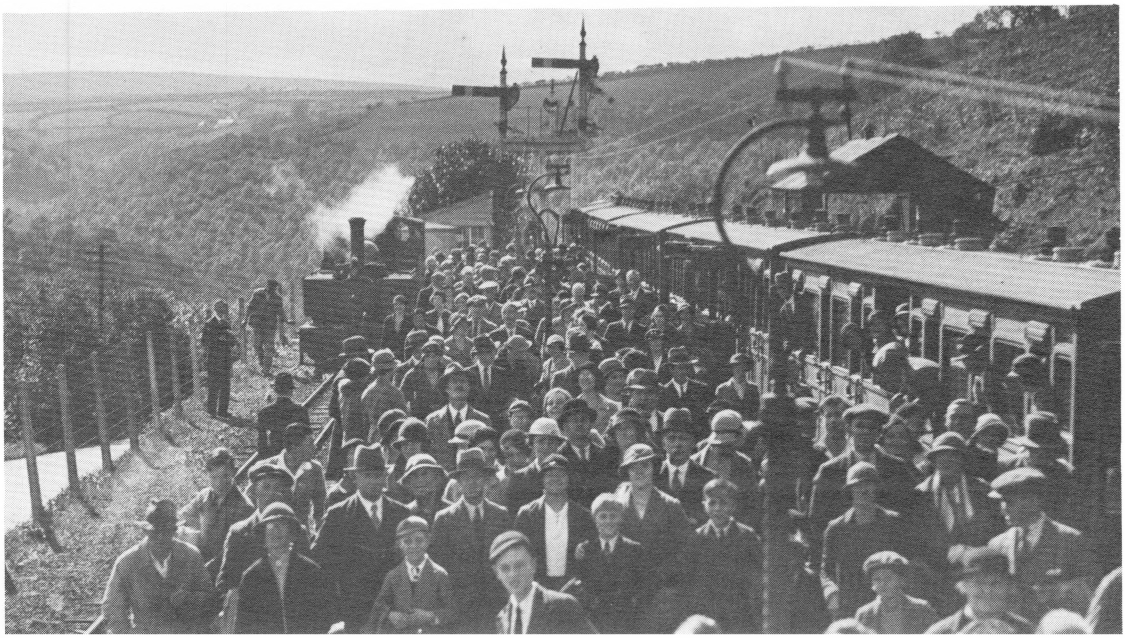
Past Woody Bay, the line switches to the right again, with double rows of fencing putting it into place until a yard, with a farmhouse nearby, resolves itself into little Caffyn's Halt, complete with road bridge. You wonder whatever did it serve, for from the bridge you can only see distant farms, dwarfed in a green expanse, and you bless the memory of the lady who, oblivious to it all, scattered seed from the windows on every trip to make it the loveliest railway in the land!

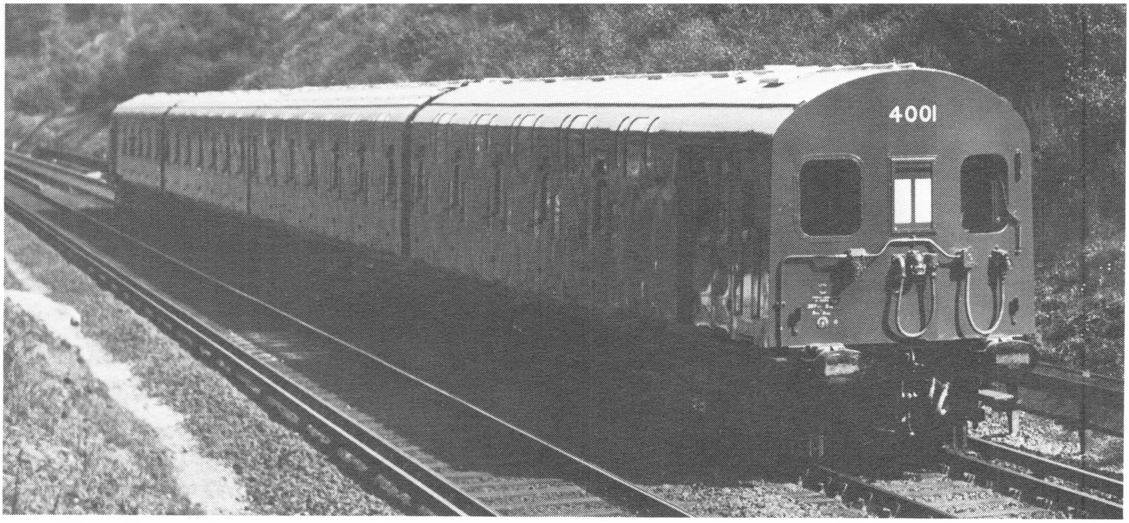
Roll on a few yards and the line again crosses left to swing around the shoulder of the hill and out of sight. The double row of fencing tip-toes high above the valley — too high for local likes: "If 'ee vel down ther, thee wouldn't bounce!"

The car can only overtake the line by coasting down through Barbrook with a third-gear lunge up the hill to the lofty station at Lynton, all very private and proper, with a fence to prove it, and a private garage sitting astride the spot where *Exe, Lew, Lyn, Taw* and *Yeo* fussed about the run-around to take the up train down to Barnstaple.

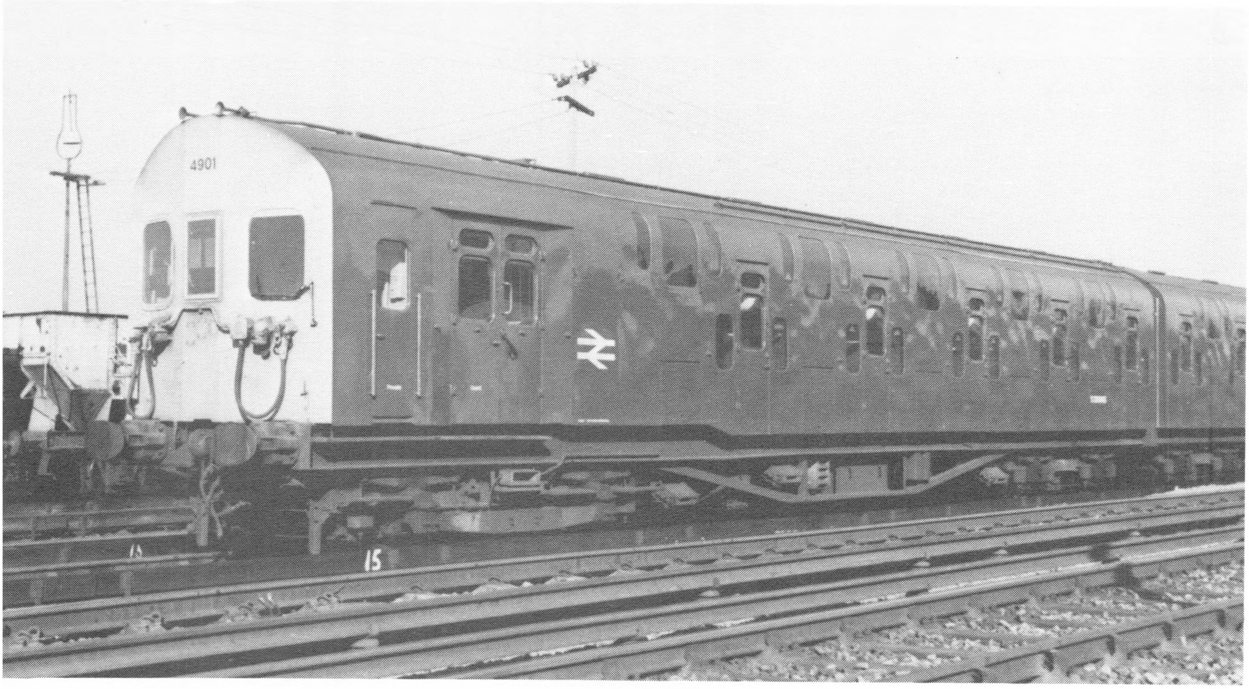
But somebody has made one concession to the Railway; there's a wall-plaque with a locomotive that is mainly poetic licence with overtones of British Rail. A sort of blue joke!

At the end of it all you realise just how hard it is to destroy a railway. True, 40 years has allowed one small lake and some private gardens to encroach, but the way is there and needs only the will. This is good railway country, where trade and tourism come together. Like hills and distant smoke.



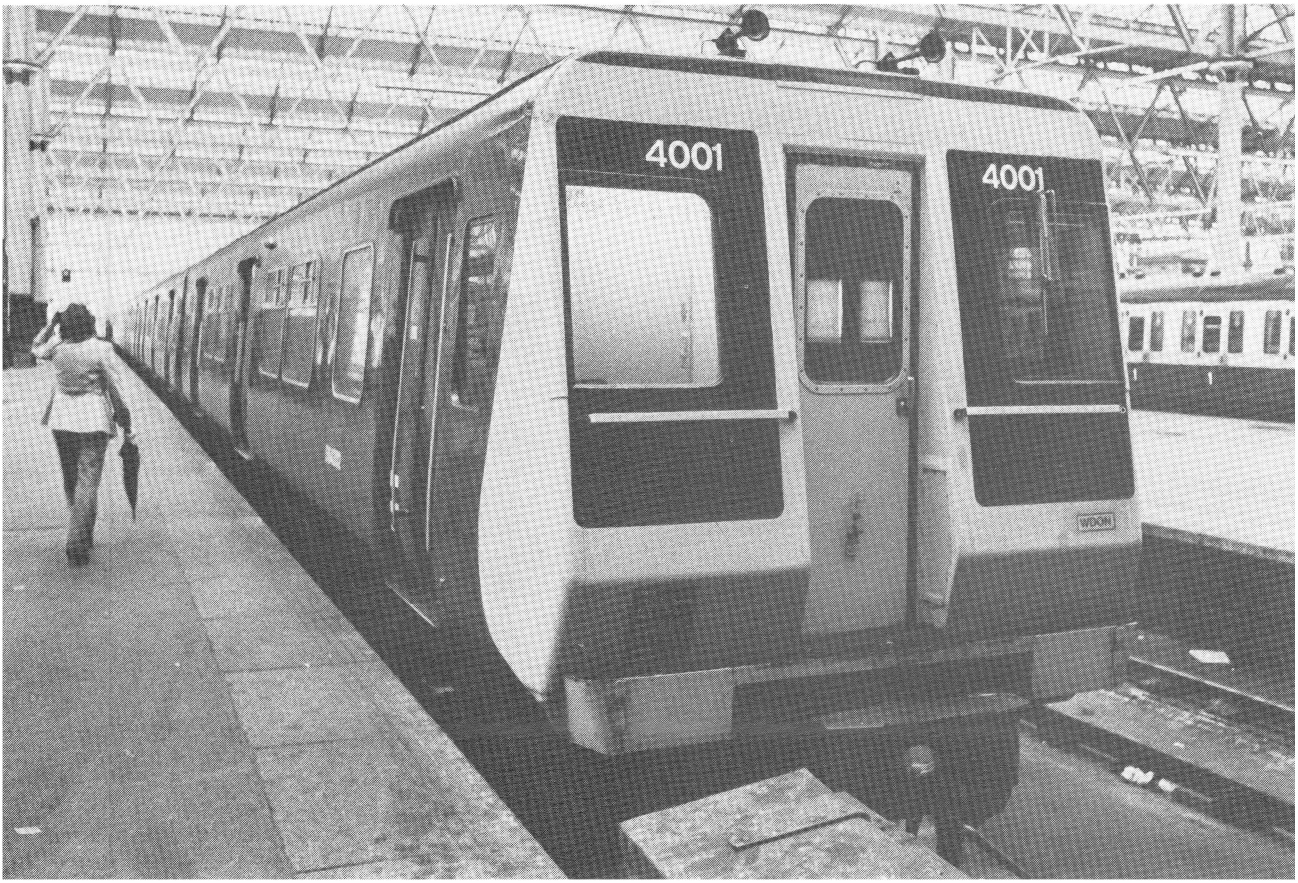


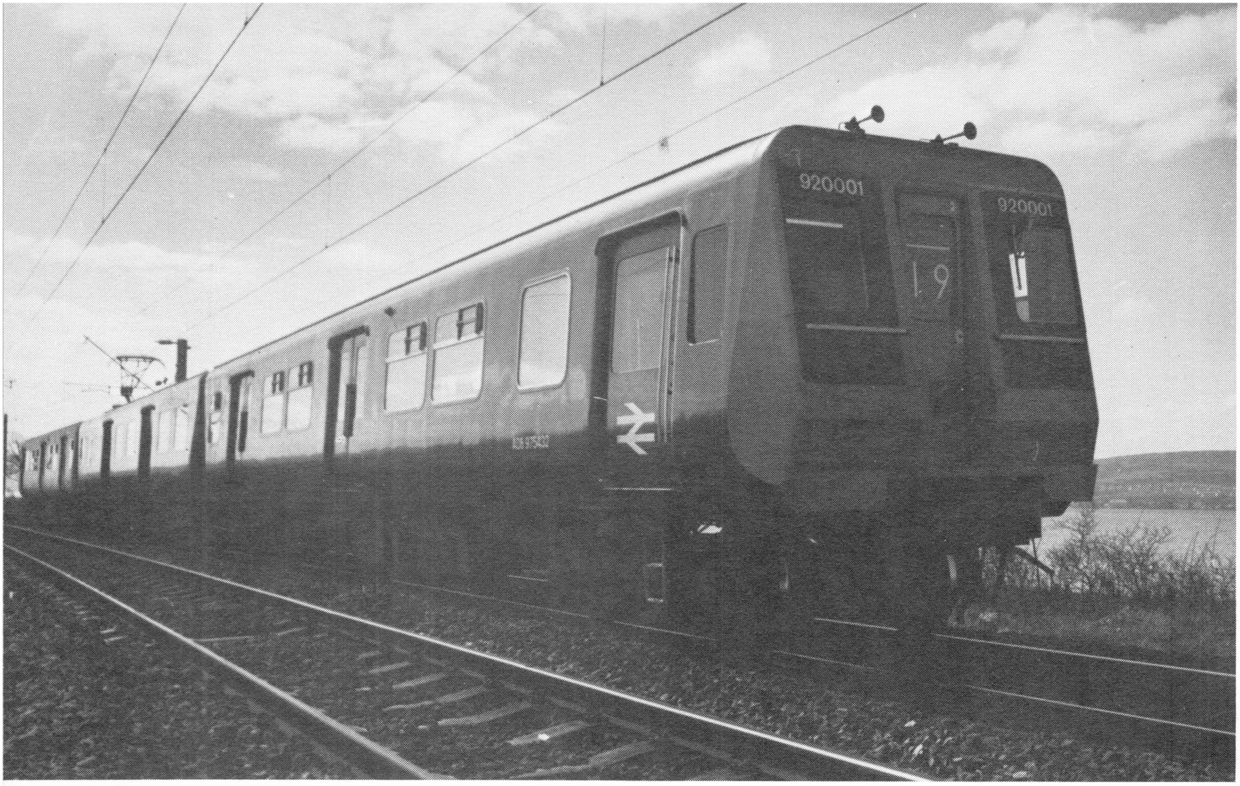
By a strange coincidence, the numbers 4001/2 have three times been allocated to prototype electric units — twice to successive Southern Region experimental units, as well as to the prototype 'Supertram' for the Newcastle Metro. First on the scene in 1949 were the Bulleid 4DD double-deck four-car units Nos 4001/2 (above left) *built to increase seating capacity on the congested South Eastern section routes. More split-level than truly double-deck, because the seating was arranged as alternate high- and low-level bays, and despite giving a third more seats, the concept proved to be unpopular with both passengers and operating staff. The passengers disliked the cramped, stuffy atmosphere, particularly of the upper compartments, which had no opening windows because of loading gauge restrictions and were therefore, despite forced-ventilation, somewhat claustrophobic, while the operating staff disliked the longer station stops caused by the poor loading/unloading characteristics, and the heavy route restriction of the units which confined them to the Charing Cross/Cannon Street-Dartford group of lines. Not surprisingly, no more units were built, and the freakish twins were left to work out their lives during weekday rush hours on the Dartford Routes until withdrawn in late 1971. For a few months prior to withdrawal, the 4DD units were renumbered 4901/2* (below left) *to make way for the second generation of experimental units, 4PEP Nos 4001/2. Introduced in mid 1971, these units represent a complete break with previous Southern Region practice, with pressure ventilation, through gangways within the unit and air-operated sliding doors giving access to high-capacity bus-type seating. A Scharfenberg automatic coupling, including all control circuits, is provided and there are no buffers. All axles are motored, and there is no guard's accommodation, the guard riding in the rear driving compartment. After extensive tests,*

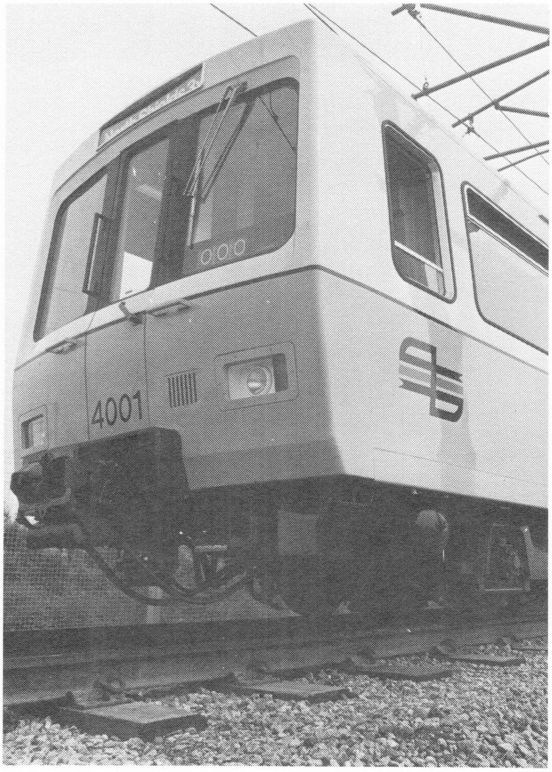


Always New – 4001/2

*which amongst other things revealed that the air conditioning system was unsatisfactory, necessitating the fitting of sliding ventilators, Nos 4001/2 entered service on South Western Division services to Hampton Court and Shepperton. A two-car unit, No 2001 finished in unpainted aluminium, was turned out early in 1972 to enable the formation of a 10-car train for trials on the South Eastern Division. Since 1973, Nos 4001/2 have been in almost continuous use on the South Western Division and are seen at Waterloo (*right*) on December 13 1975 and (*below right*) on October 2 1976. Note the flat roof, emergency end door and complete absence of front-end clutter. Despite the teething troubles seemingly inevitable with a new design, the units appear to have been successful, and are clearly much more popular with passengers than the now rather ancient 4SUBs, over which they are a vast improvement.*/British Rail, J. Scrace; Kevin Lane







*After the 10-car train tests on the South Eastern Division were complete, 2PEP No 2001 disappeared into works, to reappear later on the Eastern Region with a pantograph-fitted central car as unit 920 001, the prototype for the GN line Class 313 25kV ac/750Vdc suburban units, whose design owes much to experience gained from the PEP units. With the completion of the GN line inner suburban electrification, 920 001 has moved on again and is now working on the Glasgow suburban system (*above*) as a testbed for the electronic thyristor control equipment which is to be fitted to the new Class 315 units for the Argyle line electrification, due to open towards the end of 1978. Also under construction is Newcastle's Metro system, involving the use of an entirely new type of vehicle, the 'Supertram' and running partly over ex-BR suburban lines and partly in new tunnel sections under the city centre. Whilst construction progresses, the two prototype articulated two-car units, Nos 4001/2, are undergoing extensive trials on a special test track built on the outskirts of the city. Built by Metropolitan-Cammell, the design of the Tyne & Wear PTE Units, with their rapid acceleration, sanding gear, magnetic track brakes, automatic Scharfenberg couplers and plug-type double doors, owes much to modern continental tramway practice. The front end design (*left*) is particularly successful by British standards and the bright livery seen (*above right*) as No 4001 runs into the television-monitored station on the test track compares favourably with the rather drab overall blue of 4PEP No 4001 leaving Waterloo (*right*) on June 12 1973 on the 14.26 working to Hampton Court, although it must be said that their cousins, the Class 313 units on the Eastern Region, look somewhat smarter in their blue and grey livery./*British Rail; Trade and Industry Magazine (2); J. L. McIvor

Special
000
4001

4001
4001
30
Waterloo

Pullmans in Britain

Chris Heaps

The word "Pullman" is now synonymous in the English language with luxury and comfort. Ironically, it seems likely that it will soon no longer form part of the vocabulary of British Railways, yet continue to be used by motor coach operators who cannot match the standard of comfort and speed that is now provided by British Rail's "standard" coaching stock.

The first Pullman car in the world — "Pioneer" — was constructed by George Mortimer Pullman in the United States of America in 1864, and had the dubious honour of entering passenger service by conveying Mrs. Lincoln when accompanying the body of her husband, the late President, after his assassination. However, the unprecedented standard of comfort of the new vehicle found immediate favour with the travelling public, and contracts were soon placed with his Pullman Palace Car Co. Inc. for the construction and operation of Pullman sleeping cars on the Michigan Central Line.

The first Pullmans to operate in Britain appeared on the Midland Railway after its chairman, James Allport, had visited the USA and sampled the delights of Pullman's vehicles in 1872. In the following year, G. M. Pullman was introduced to the shareholders of the Midland Railway, and it was agreed that he should be invited to build and operate cars on the Midland, for the privilege of travelling in which, as in the USA, passengers would be required to pay a supplementary fare.

In 1882, a separate British company was formed, the British Pullman Palace Car Company, which remained under the control of G. M. Pullman until his death in Chicago in 1897. After his death, the British Company continued under the control of the trustees of his estate, until in 1907 the company was purchased by Lord Dalziel — already Chairman of the Wagons-Lits Company — who developed the company until it was able to "go public" in September, 1915.

The Pullman Car Co. Ltd., as it became in 1915, retained separate ownership of its' Pullman cars through the Grouping of 1923, the Second World War and even the Nationalisation of the Big Four in 1947, but control of the Company was eventually acquired by the British Transport Commission in 1954 and it now forms an integral part of British Railways.

First introduced in 1960, the diesel Pullmans set a new standard of comfort and service on British Railways, and were in many ways the forerunners of the present-day High Speed Trains. With the withdrawal of the 'Midland Pullman' service in 1966 when the West Coast route to Manchester was electrified, the two units were switched to the Western Region to enable the South Wales Pullman service to be dieselised. Here, the up South Wales Pullman runs into Newport on April 25 1973, just a few weeks before all the units were withdrawn from traffic in favour of more modern non-Pullman air-conditioned Mark 2 stock./J. H. Cooper-Smith

At the time of writing, Pullman cars are still provided on some services on the Eastern and London Midland Regions of British Railways, but the vehicles are all over ten years old, and do not boast the modern bogies and air conditioning equipment with which the later standard British Railways Mark 2F and Mark 3 stock and the High Speed Trains are fitted, and for which no additional supplement is charged.

The most recent stock was specially constructed for the Manchester Pullman service — and for a similar but now withdrawn service to Liverpool — when completion of the 25kV electrification into Euston in 1966 enabled electric working throughout. In recent years they have become less popular as the regularity and standard of comfort of scheduled trains has progressively improved.

The vehicles still in use on the Eastern Region — some now on ordinary services — are the survivors of a large batch of cars built in 1960 by Metropolitan Cammell for the Sheffield, Leeds, Hull and Newcastle services, and finished in the traditional Pullman livery of umber and cream, with the first class cars graced with names in Pullman fashion. The remaining cars now look decidedly less impressive in the inverted blue and grey livery adopted by British Railways for all Pullman vehicles in the mid-1960s. The East Coast Pullmans were built to the BR Standard Mark I coach profile, adopted in 1951, but the later London Midland cars, which were delivered in the modern grey and blue livery, have a more modern appearance and match the profile of Mark II stock. Both designs retained such Pullman eccentricities as individual table lamps and the dangerous inward-opening end doors.

The Pullmans that remain, on the Eastern Region, unlike the first class only Manchester Pullman, form only part of trains which are otherwise formed of standard stock and in recent years there arose the absurd position that first class passengers were obliged to pay a supplement to travel in grubby, non-air conditioned vehicles by then more than 15 years old, whereas elsewhere in the same train non-supplement paying second class passengers were enjoying the comforts of stock not more than two or three years old and fully air conditioned! Needless to say, this arrangement was not popular, and it seems that sadly, from a traditional point of view if not necessarily that of the travelling public the days of Pullman cars on BR are numbered.

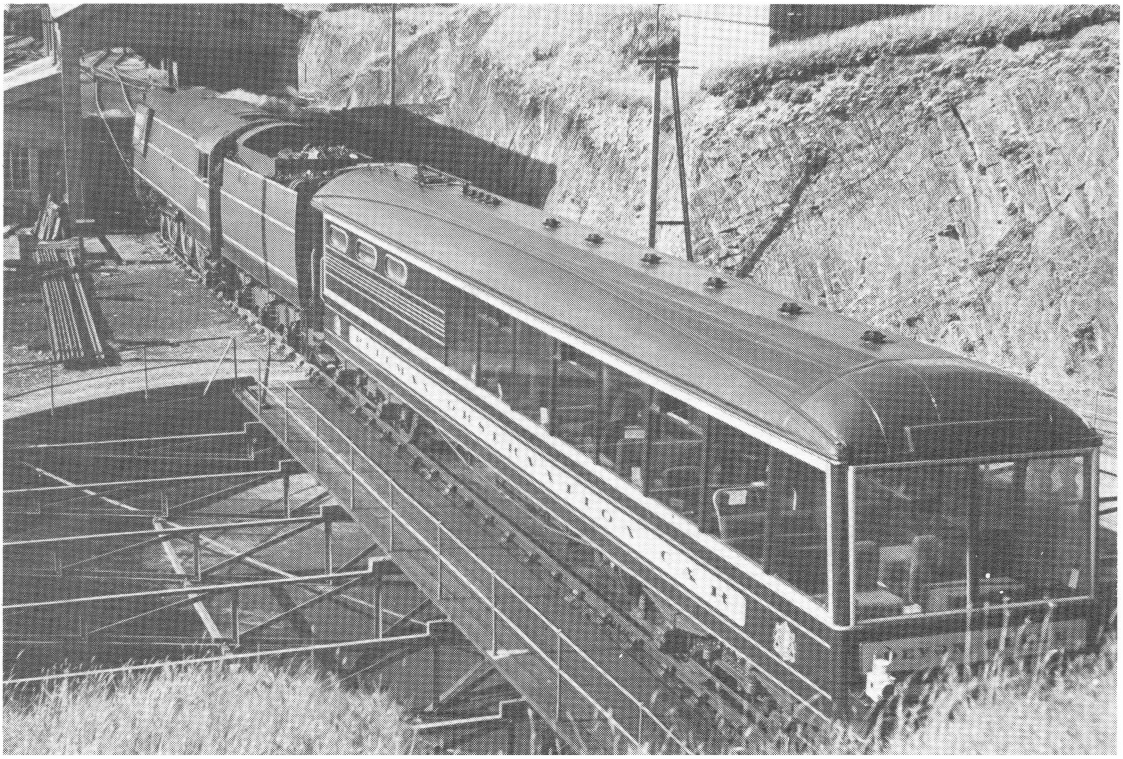
Pullman services have suffered dramatically during the last ten years from the quite justifiable BR policy of providing regular, fast Inter-City services on which no supplements are payable. There is simply no justification for special supplementary-fare services on the increasing number of lines enjoying fast, regular interval services. Thus the romantic but, one suspects, increasingly uneconomic all-Pullman "Bournemouth

Belle", between Waterloo, Southampton and Bournemouth, gave way to ubiquitous electric stock in 1967, whilst the much loved all-Pullman 5-BEL "Brighton Belle" electric multiple-units gave way to more prosaic stock on the non-stop Victoria-Brighton run in 1972.

Although the Great Western Railway only briefly experimented with Pullman travel, the short-lived "Torbay Pullman" appearing only in the 1929 and 1930 summer timetables, its successor, the Western Region of British Railways, for over a decade used air-conditioned diesel-electric all-Pullman multiple-unit trains between Paddington, Bristol and South Wales. Three eight-car and two six-car Pullman sets were constructed in 1960 by Metropolitan Cammell Ltd; the six-car sets were first class only and were originally introduced in July of that year on the Midland Division of the London Midland Region between St. Pancras and Manchester Central as the 'Midland Pullman', while in September the eight-car sets, which had both first and second class accommodation, entered service between Paddington and Bristol (The 'Bristol Pullman') and between Paddington and Birmingham (Snow Hill), via High Wycombe and Banbury (The 'Birmingham Pullman'). Completion of electrification of the ex-LNWR main lines from Manchester and Birmingham to Euston and the introduction of the electrically-hauled Pullmans resulted in the withdrawal of the Midland Pullman in 1966 and the Birmingham service in 1967, after which all five sets were concentrated on the Western Region. This transfer enabled the Western Region to replace the traditional locomotive-hauled Pullmans which had been introduced on the "South Wales Pullman" service to Cardiff and Swansea at the commencement of the summer timetable in 1955. For a short time one of the six-car sets filled in between its morning and evening duties with a mid-day working to Oxford and back, but the service attracted little patronage and was soon withdrawn. All the Western Region diesel Pullmans were withdrawn in 1973, but in many ways they paved the way on the Bristol and South Wales lines for the higher standards of speed and comfort — without the payment of any supplement — enjoyed since the introduction of High Speed Trains in 1976.

When the diesel Pullman sets were introduced in 1960, they were finished in a specially-designed livery of blue with grey window panels, although the Pullman crest was retained on the driving motor cars. In later years, the reversed grey and blue livery adopted for locomotive-hauled Pullmans was applied to the diesel units, and for safety reasons the cab ends, along with all other locomotives and multiple units, were painted all-over yellow and were no longer graced by the Pullman insignia.

The three 5-BEL five car electric multiple-units built in 1933 and used on the "Brighton Belle" service were also repainted towards the end of their lives in modern livery, at which time the names previously adorning their first class trailer cars were removed, as were the



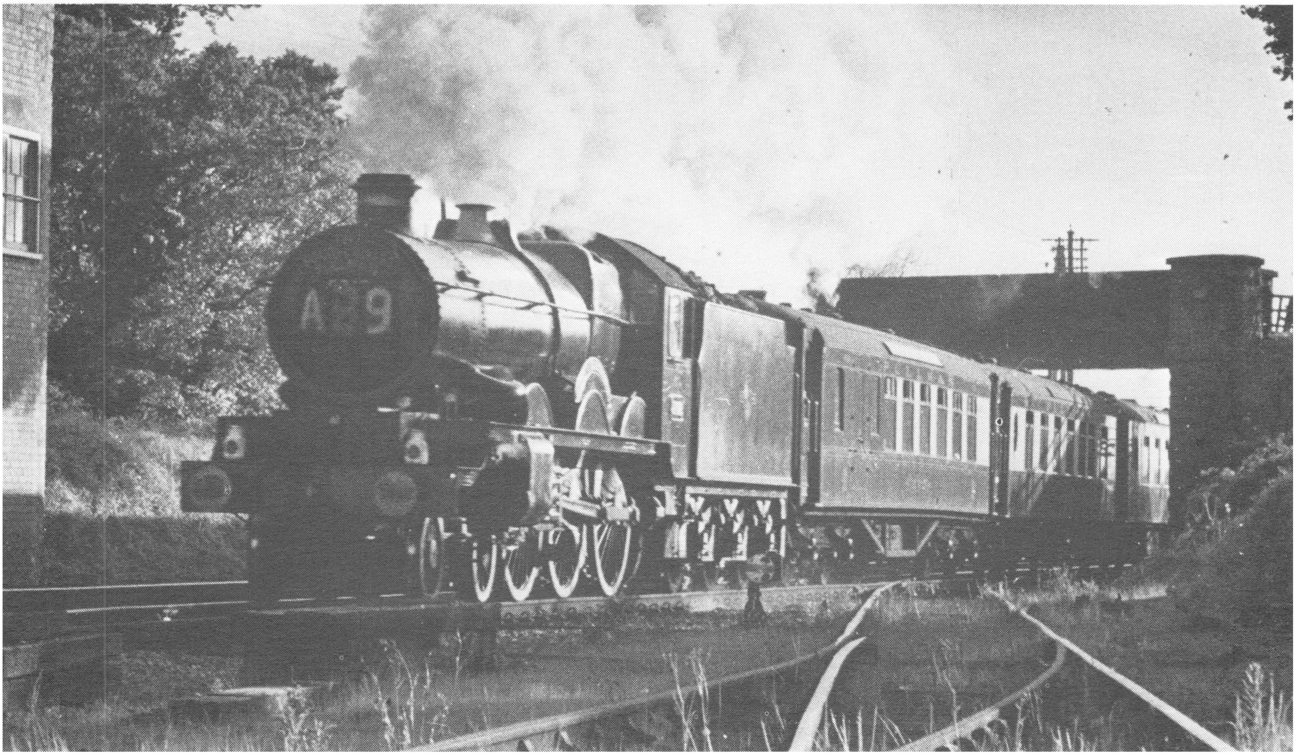
One of the operating problems of the Southern Railway's ambitious 'Devon Belle' Pullman train was that the specially-converted observation coaches on the tail of each of the two train sets had to be turned at the end of each journey. After arrival at Ilfracombe on May 28 1949, Bulleid West Country Class Pacific No 34041 Wilton *reverses the observation car through the single-road engine shed and on to the turntable to be turned ready for the return trip to Waterloo.*/C. A. Todhunter names on the Pullman cars that remained in use on the "Golden Arrow" service between Victoria and the Channel Ports. In their final guise, the names "Brighton Belle" and "Golden Arrow" adorned the sides of the re-painted vehicles and the coaches were "lined out" to add a mark of distinction that is sadly lacking from more modern stock.

The Southern Region had inherited its Pullman car services and sympathy for the Pullman concept from the constituent members of the Southern Railway. Pullman cars had been introduced on the London Brighton and South Coast Railway in 1875, and despite the failure of the all-Pullman Sunday service known as the "Pullman Limited" introduced in 1881, a new all-Pullman first class "Pullman Limited" was provided on the Brighton line in 1888, and proved a greater success. Five years after the first Pullman cars had been delivered to the LBSCR, the first Pullman car service commenced on the London and South Western Railway, between Waterloo and Exeter. Pullman cars were introduced on the Bournemouth line by the LSWR in 1890, becoming the forerunners of the "Bournemouth Belle," and coaches of similar standard and design but built by the Gilbert Car Company were used by the South Eastern Railway on the Hastings and Folkestone Lines.

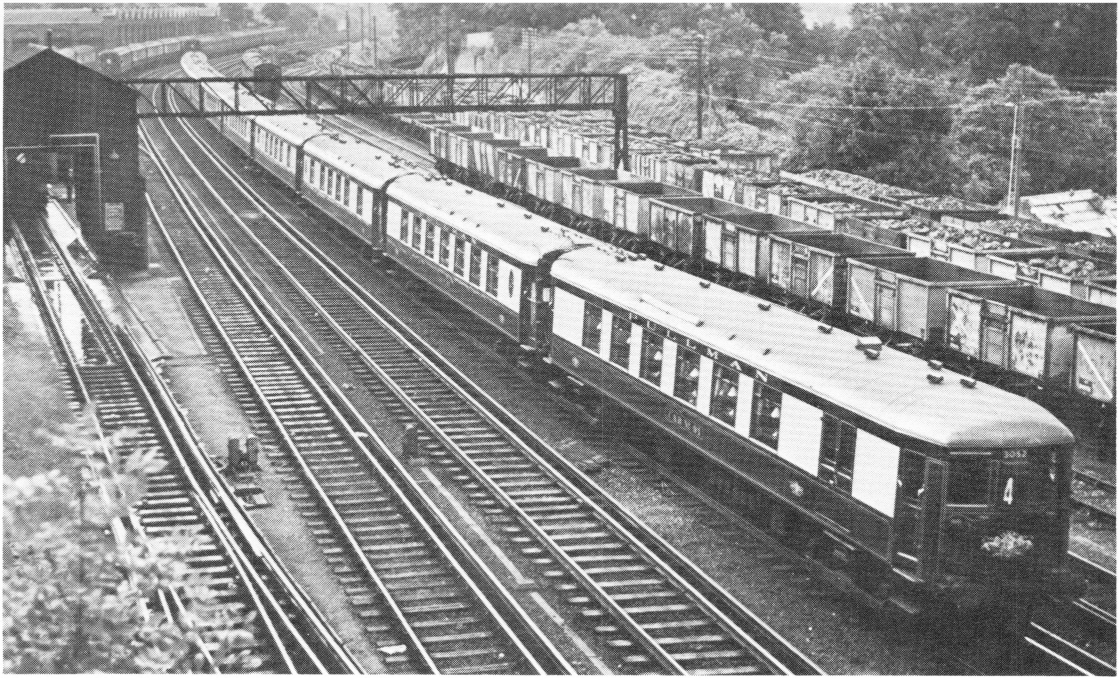
Of the three Companies, the LBSCR was the most enthusiastic Pullman supporter. The all-Pullman "Sunday Pullman Limited" introduced in 1898 (and renamed the "Brighton Limited" in the following year) had run on Sundays only, but from 1908, after the takeover by Lord Dalziel, a new train, called the "Southern Belle", was introduced on a daily basis. Then described as "the most luxurious train in the world", it made its inaugural trip on November 1, 1908 and was the forerunner of the electrically operated "Brighton Belle" that ran, save only during the Second World War, between 1933 and 1972. The "Southern Belle" continued in operation throughout the First World War, when third class passengers were first admitted, and after the War both first and third class Pullman services were provided between Victoria and Brighton, Worthing, Littlehampton, Bognor, Portsmouth and Eastbourne.

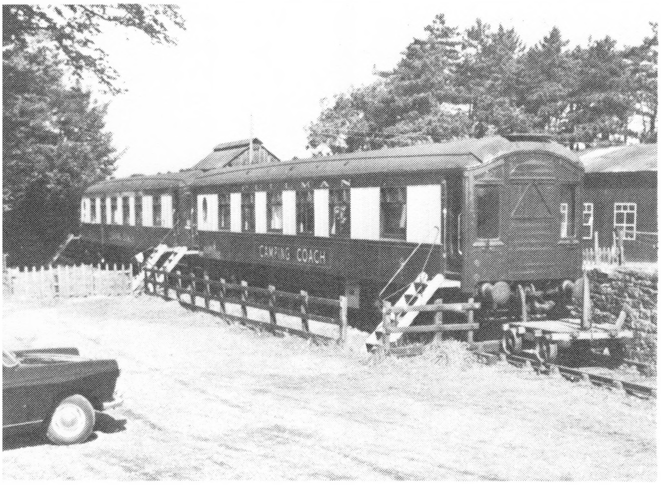
On the Eastern section of the Southern Railway, previously the South Eastern and Chatham Railway, Pullman (as opposed to Gilbert) cars had been introduced in 1910, and the Southern Railway provided Pullman services on the Eastern section to Ramsgate, Sandwich and Hastings. A new all-Pullman train, originally known as the 'Thanet Belle' but from 1951 as the 'Kentish Belle' was provided by the Southern Region from 1948.

In contrast to the situation on completion of the first phase of the Southern Region Kent Coast electrification in 1959, when all Pullman services were withdrawn other than the "Golden Arrow" and the Wagons-Lits coaches on the Night Ferry, provision was made in the Brighton, Worthing and Hastings via Ore electrification schemes of the mid-1930s for the

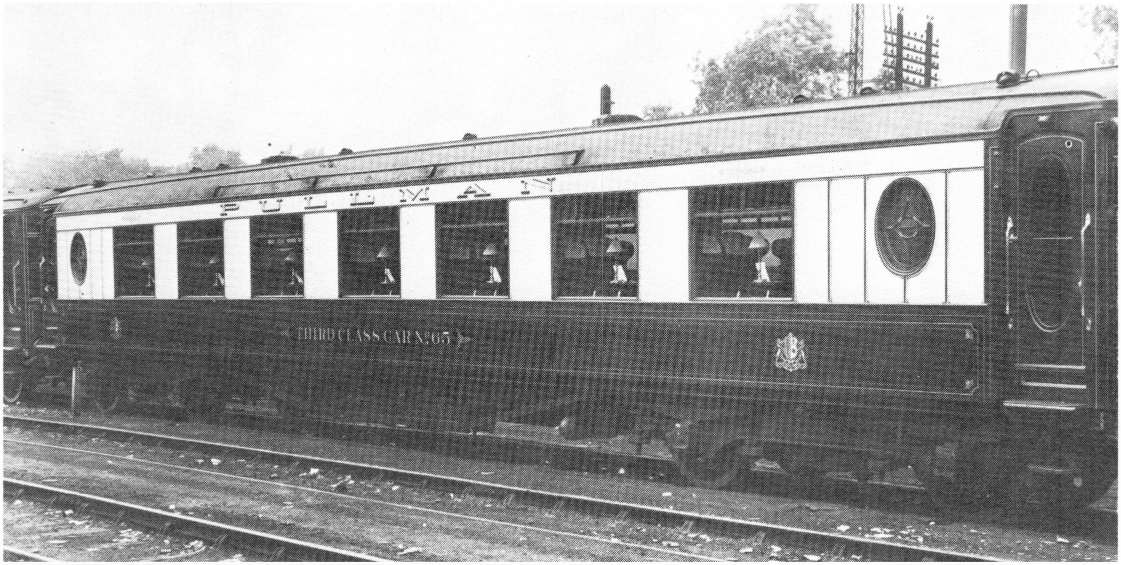


Prior to dieselisation, the 'South Wales Pullman' was one of the fastest trains on the South Wales line, and as the sun sinks in the west on a fine day in May 1961, the up train hurries past Westerleigh West Signal Box behind an unidentified Castle Class 4-6-0./G. F. Heiron





When the Southern Railway electrified its London-Brighton main line in 1933, the Pullman Car Co built three five-car all-Pullman 5BEL units Nos 3051-3 to work the 'Southern Belle' service. Renamed the 'Brighton Belle' in 1935 when the 'Bournemouth Belle' was introduced, the train made three return trips each day between Victoria and Brighton. Nearing the end of their last trip of the day on July 24 1962 are No 3052 and a sister unit (above) *as they pass the Preston Park Works of the Pullman Car Co, outside which, in the distance, is stabled the third 5BEL unit. Inward-opening end doors, oval toilet windows and wide, deep main windows, with elegant table lamps, were all features of the traditional Pullman car, epitomised by Third Class Car No 65* (below). *Built in July 1925 as a First Class Car, it became Third Class in 1937 and was subsequently rebuilt as a Brake Third at Preston Park. With their solid construction and luxuriously-appointed open layout, many Pullmans have survived withdrawal from revenue earning service and continue in private use either on preserved railways, or as stationary bars or restaurants, whilst others have been retained by BR and converted to Luxury Pullman camping coaches parked at wayside stations in holiday areas, as were the two cars* (left) *at Ravenglass in 1960.*
/C. P. Boocock; J. C. Gillham



retention of Pullman services. In addition to the three 5-BEL all-Pullman units constructed for the "Brighton Belle" service, 20 6-PUL and 3 6-CIT six-car electric units were constructed, each including a single composite Pullman car in its formation, together with 17 similar 6-PAN units incorporating a pantry car, a vehicle staffed by the Pullman Car Company but owned by the Southern Railway. On completion of the Portsmouth electrification in 1937, and the mid-Sussex line scheme (via Dorking and Horsham) in 1938, railway-owned restaurant and buffet cars, again staffed by Pullman Car Company employees, were incorporated in the new 4-RES and 4-BUF electric units constructed for the services.

The "Golden Arrow", the "Brighton Belle" and the Pullman car services to the South Coast provided a high quality service decade after decade, interrupted only by the Second World War. Pullman services to Devon were, however, less successful. Just as the Torbay Pullman on the GWR succumbed after only two seasons, so the "Devon Belle", the all-Pullman train bravely introduced by the Southern Railway in 1947, met with mixed fortunes and lasted less than a decade. It only ever ran in summer, and lack of support led the Southern Region of British Railways, as the Southern Railway had by then become, first to withdraw the through coaches to Plymouth in 1950 leaving the portion for the North Devon lines, and then to run the train at peak weekends only until it was finally withdrawn in 1955. The two "Devon Belle" train sets included an observation car at the rear, affording passengers a panoramic view of the surrounding countryside, and to ensure that as many passengers as possible were able to enjoy the limited observation facilities, the chairs installed in the observation cars, although superficially luxurious, were specially designed to "persuade" people to vacate their seats after a limited period of time!

After withdrawal of the "Devon Belle" in 1955, the observation cars were transferred to the London Midland and Scottish Regions, where they were repainted in Midland Lake livery for use on the North Wales Land Cruise Train — "The Welsh Chieftain" — and on the Oban Line respectively. Occasionally, too, the obervation cars were put to use on enthusiasts' or other "specials", as on the occasion of the Ian Allan "Potteries Express" in 1959.

Pullman cars were also used extensively by the Southern Region on its Ocean Liner specials from Waterloo to Southampton Docks, and on Royal Trains. The "Statesman" and "Cunarder" Pullman trains greeted trans-Atlantic passengers at the Ocean Liner Terminal at Southampton until the early 1960s, and many a Royal Guest has enjoyed Pullman comfort between Victoria and Tattenham Corner on Derby Days of yesteryear. Numerous Kings and Presidents on State Visits have been conveyed by Pullman trains from Gatwick Airport to Victoria, but in recent years the maroon ex-LNWR Royal Saloon has been used on such occasions. Today, as the inexorable trend towards standardisation continues, special trains are no longer so readily available, and even the Queen has been obliged to ride in standard British Railways multiple unit stock when travelling on the Southern Region.

When one of the "Devon Belle" observation cars was transferred to the Midland Region in 1955, albeit in a demoted condition, it provided the first Pullman-type service to work over ex-LMS lines for over 20 years, for no Pullman services had been provided on the London Midland and Scottish Railway since 1933. The Caledonian Railway had introduced 10 Pullman restaurant cars before the First World War, to be joined by six additional cars in 1922/23, and a buffet observation car "Maid of Morven" had been introduced on the Caledonian Line to Oban in July, 1914. In the 1920s, Pullman buffet cars were introduced on services to Ayr and Inverness, but the contract between the LMS and the Pullman Car Company ended in 1933 and the stock was purchased by the LMS. It is perhaps therefore ironic that it was on the London Midland Region that the experimental "Midland Pullman" diesel-electric multiple-unit was introduced in 1960, and that it is over ex-LNWR metals that the "Manchester Pullman", the last remaining complete Pullman train, still runs.

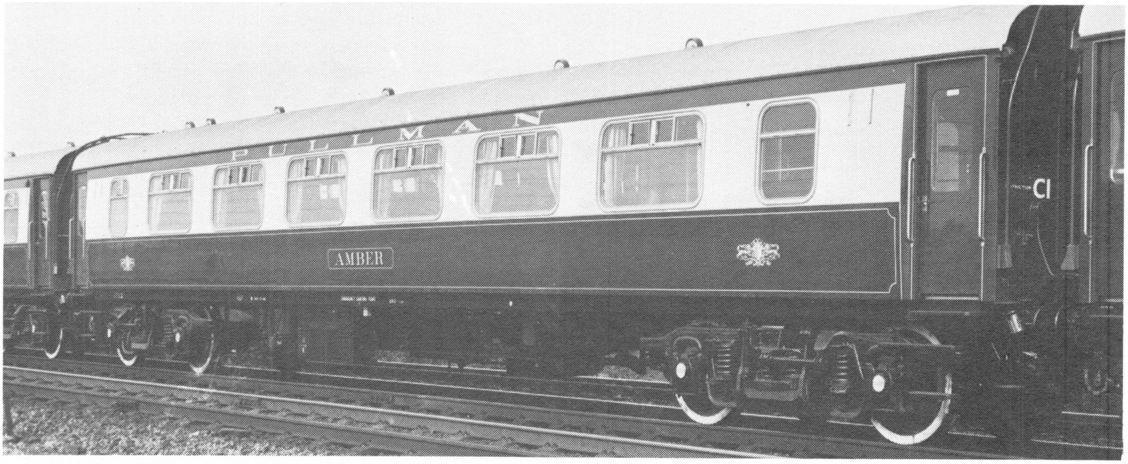
It had been on part of the LMS, on the Midland Railway, that George M. Pullman had first introduced Pullman travel to the United Kingdom. The first regular Pullman service commenced between St. Pancras and Bradford on June 1, 1874, and one of the original British cars, "Midland", was shortly afterwards dispatched to Europe for 12 months to assist the successful conclusion of a contract between the Pullman Car Company and the Upper Italian Railway. In 1876, the Midland Railway services were extended over the newly-opened Settle and Carlisle Line to Glasgow, and to Edinburgh via the Waverley route. But just seven years later, the Midland took over all the Pullman parlour cars and the two dining cars running on its line, and in 1888 declined to renew its contract with the Pullman Car Company. The early Pullmans had been constructed at Derby, initially using prefabricated parts imported from the USA, but the Company's works were transferred to the more loyal pastures of the LBSCR at Preston Park, near Brighton, after the Midland withdrew its support.

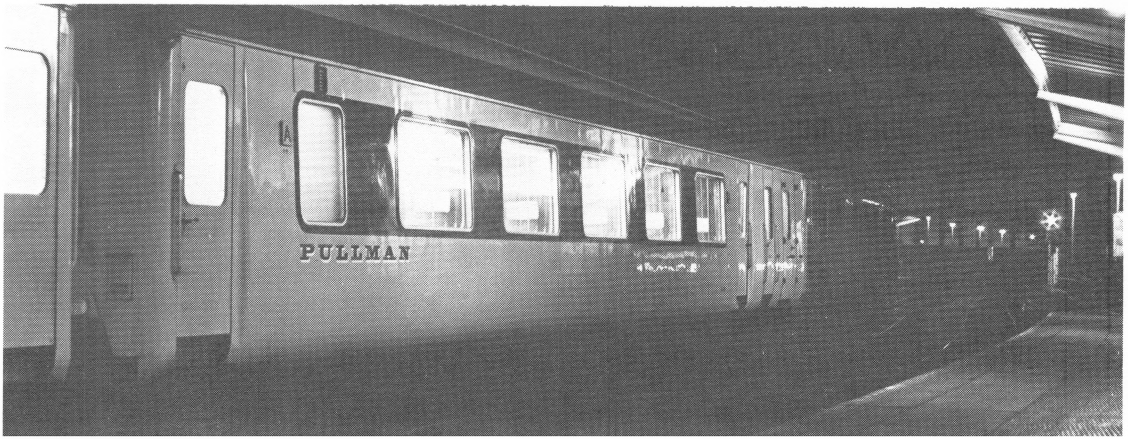
Although the Eastern Region of British Railways has in recent years been one of the principal users of Pullman trains, the London & North Eastern Railway and its major constituent companies, the Great Northern and the Great Eastern Railways, made but patchy use of Pullman facilities. The GNR had introduced Pullman services to match the enterprise of the Midland in 1878, in which year one of the early parlour cars was rebuilt as a dining car, the first in the United Kingdom, and named "Prince of Wales". In July, 1880, a "Pullman Dining Car Express" was provided between Kings Cross and Leeds, but the Pullman car contract with the Great Northern ended in 1895/6 and the vehicles were transferred to GNR ownership. Pullman services did not reappear again on the East Coast Main Line until the end of 1922.

The Pullman Car Company lost no time in getting its feet in the door of the newly-formed London and North Eastern Railway; at the time of the Grouping in 1923, Pullman car service was provided for the GER on its "Hook Continental" train between Liverpool Street and Parkeston Quay, and on services between Liverpool Street, Suffolk and Norfolk. The LNER inherited the contract with the Pullman Car Company from the GER, and quickly formed the cars into two complete trains for use on the East Coast Main Line. New cars were constructed for the introduction of a "Harrogate Pullman" in July, 1923, and this train was so successful that it was extended to Edinburgh two years later, but without a change of name. In the same year, 1925, the unsuccessful "Sheffield Pullman" introduced in 1924, was replaced by the "West Riding Pullman" to Leeds and Bradford. The confusion that must have been caused in the minds of intending passengers by the "Harrogate Pullman" terminating at Edinburgh was finally resolved in 1928 when it was rechristened "The Queen of Scots", while the "West Riding Pullman" which by now included a portion for Hull, became the "Yorkshire Pullman" in 1935.

All Pullman services were withdrawn and the vehicles stored during the Second World War, although individual coaches were made available for the use of VIPs such as Winston Churchill and military leaders. The LNER and the Pullman Car Company were quick off the mark upon the termination of hostilities, and not only re-introduced the "Yorkshire Pullman" as early as November 1946 and the "Queen of Scots" in July 1948, but also inaugurated an entirely new

The first departure from traditional locomotive-hauled Pullman design came with the appearance of new all-steel vehicles on Eastern Region services in 1960. Although retaining such details as the inward-opening doors and other Pullman fittings, they were basically adapted BR Mk1 vehicles with Commonwealth bogies as on first Class Car Amber *below. Similarly, the cars built for the Manchester and now-withdrawn Liverpool Pullman services when the West Coast line was electrified in 1966 were air conditioned adaptations of Mk2 stock, again with the dangerous inward opening doors, but with much more modern appointments, and sporting the new 'reversed Inter-City' grey and blue Pullman livery seen on the leading vehicle of the Manchester Pullman*(bottom) *as it awaits departure from Piccadilly behind Class 86/2 No 86205 on a winter's evening in 1976.*/British Rail; B. Watkins





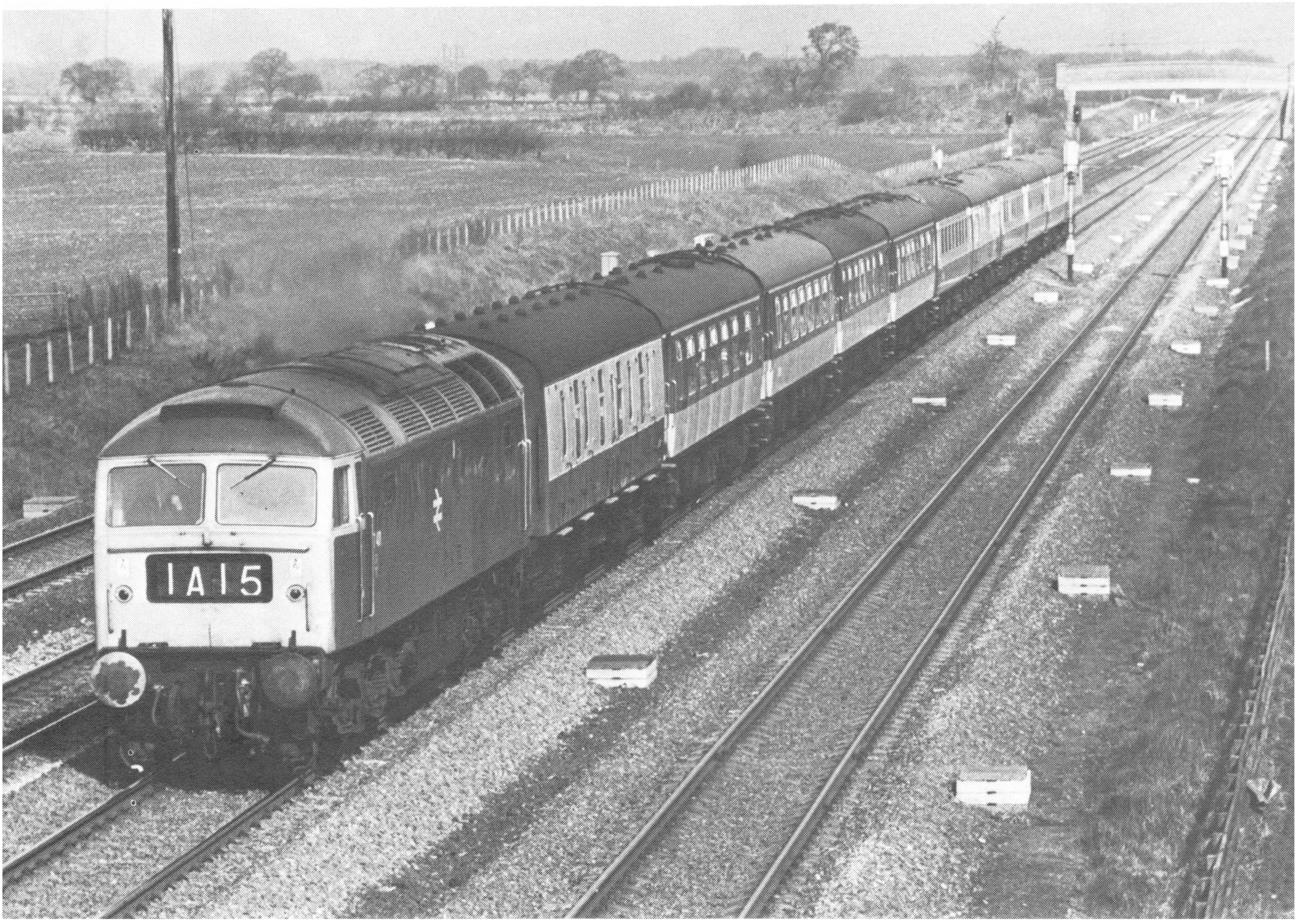
service — the "Tees-Tyne Pullman" — in September of the same year. On the Southern Railway, the "Bournemouth Belle" had been re-introduced even more promptly, its post-war inaugural trip taking place on October 7 1946.

The Great Central Railway, which became part of the LNER in the 1923 Grouping, toyed with the idea of Pullman services but did not conclude any contract with the Company, despite the introduction of two Pullman cars by the Metropolitan Railway, whose metals it shared to Aylesbury and Verney Junction, in 1910. The two Metropolitan cars, named "Mayflower" and "Galatea", remained in service even after the formation of the London Passenger Transport Board in 1933 to provide a standard of comfort between Moorgate, Baker Street and Aylesbury that would quite astonish present-day travellers on the Inner Circle and Metropolitan lines! Both were withdrawn from service shortly after the outbreak of the Second World War and since they have never been replaced, this marked the end of on-train catering on the Underground network.

The "Master Cutler" service to Sheffield is associated with the Great Central Railway, but although an express so named had been introduced by the LNER in 1947 between Marylebone and Sheffield, it was not until part of the ex-GCR line had come under Midland Region control as a result of reorganisation that the Eastern Region in 1958 transformed the train into a Pullman express. In its new guise, however, it departed from Kings Cross and ran via Retford, using ex-GCR metals only thence to Sheffield Victoria.

In addition to the few remaining Pullman services on the Eastern and London Midland Regions, Pullman coaches can still be seen in a new guise, parked quietly in sidings at outposts of the British railway system never served by the Pullman Car Company itself. From Marazion, near Penzance, in the west to the far north of Scotland, converted Pullman cars remain in use as Camping Coaches — providing even in old age a service for which the public is prepared to pay a supplement!

The traditional lined brown and cream Pullman car livery always looked slightly out of place on the modern all-steel vehicles, and the grey and blue livery in which all the remaining East Coast Route Pullmans have been repainted looks much more businesslike. But their interior appointments do not match the latest air-conditioned Mk2 and 3 stock, and although all the second class cars have long since been relegated to other non-Pullman (but in some cases first class) duties, some first class cars remain in service, giving the absurd situation seen here on the 09.12 Newcastle-Kings Cross train, the 'Tees-Tyne Pullman,' as it passes Raskelf on April 4 1975 behind Class 47/4 No 47401. Non-supplement paying second class passengers are travelling in the air-conditioned luxury of Mk 2 vehicles, while the hapless first class passengers have no choice but to pay a supplement to travel in vehicles 15 years older and not air conditioned!/John E. Oxley



From Copper Caps to Copper Wires

D. W. Winkworth

Of the four companies to emerge from the Grouping of 1923, the Great Western Railway was least affected and therefore best placed to continue its existing policies and to initiate new ones without having to take into account the often conflicting ideas of various constituent companies. It could be said, therefore, to have had a distinct advantage over the other three companies in being able to present to the public a go-ahead image, and this the then General Manager, Sir Felix Pole, seemed bent upon exploiting.

At the meeting of the Board of Directors held on May 1 1925, Sir Felix said that in view of references which had been made in the House of Commons and elsewhere to the possibilities of electrification of main line railways, he considered a consulting engineer of recognized standing should be asked to prepare a scheme for electrification of a long length of main line — such as London to Bristol, or London to

Birmingham — with the object of demonstrating whether such a proposal would be commercially justifiable. He proceeded to explain that the question of electrification had already been referred to a committee of the company's officers, who would be associated with any investigation by an independent authority, and that it had been ascertained that Sir Philip Dawson of Messrs. Kincaid, Waller, Manville & Dawson would be prepared to investigate the matter and submit a scheme for a fee of £2100 plus travelling and office expenses.

The Board agreed to this proposal, but with the proviso that expenses were not to exceed £1000. Accordingly, the next day, Sir Felix Pole wrote to Sir Philip Dawson and instructed him in the matter. Evidently Sir Philip gave the matter careful consideration, for it took him over two years to submit his report, which was finally received in June 1927.

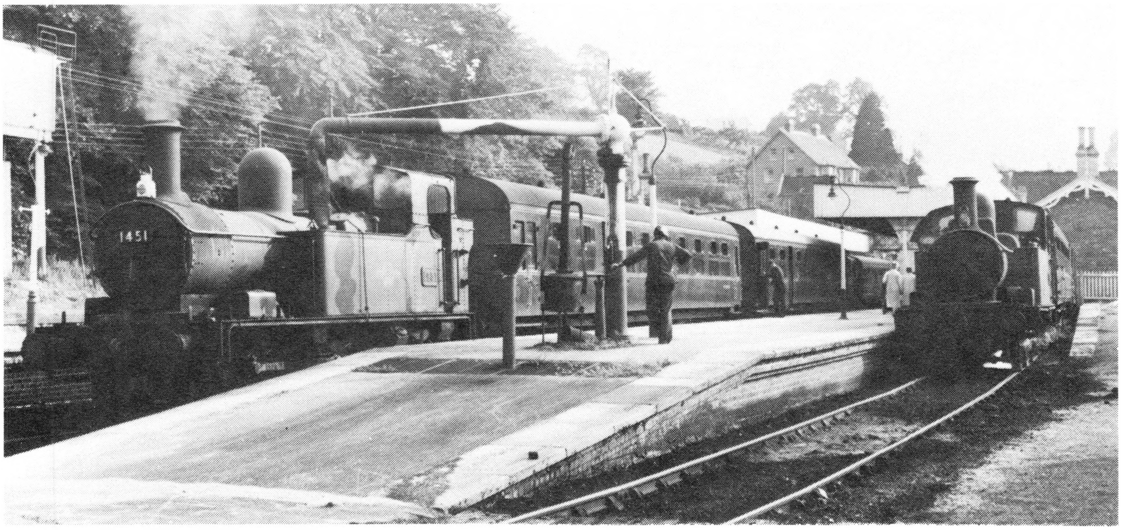
Clearly, the Railway officers had steered things the way they considered desirable, for the preamble to the report refers to the "desirability of electrifying a section of not less than 120 miles," queries "whether the expenditure involved would be justifiable on a commercial basis," conveniently notes that "London to Birmingham would be preferable but as worked by other companies a mixed steam/electric service not desirable" and then comes up rather surprisingly with ". . . . after careful consideration with your officers it was decided to consider the section from Taunton to Penzance"!

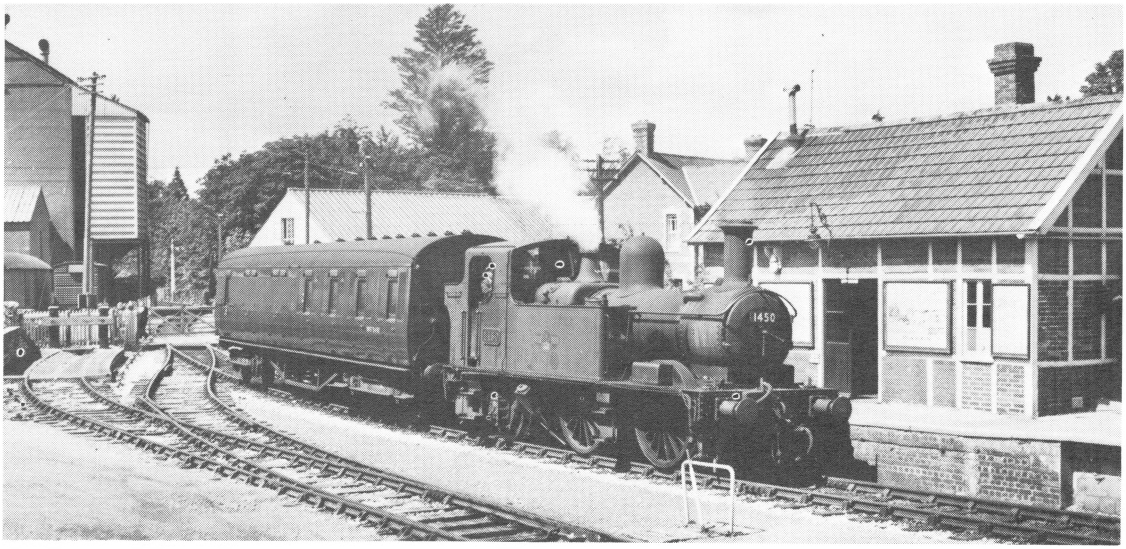
So, without any explanation, Sir Felix's London-Bristol suggestion had been disposed of and a line with a much lower traffic density selected instead. The reasons given for choosing the West of England route were congestion between Taunton and Newton Abbot at certain times of the year; severe gradients; and the expenditure otherwise required on existing steam locomotive sheds. One would have thought that such an eminent consultant as Sir Philip would have hesitated to consider a scheme which had such a flimsy basis as the first and last of these reasons but, as is often the way in such matters, once launched the investigation proceeded.

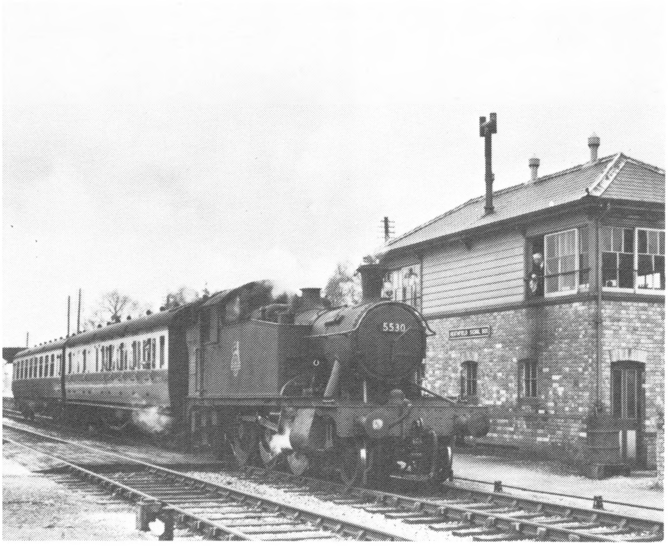
However, having committed himself, there was no dragging of feet — although there was the option of a half-measure if desired. Incredibly, the proposal included the electrification of all GW lines west of Taunton, with the sole exception of the lines in Millbay docks and thus the scheme included such unlikely lines as the Totnes Quay branch, Portreath goods, Treamble and even a stretch of Southern Railway metals at Boscarne. The half-measure was to electrify completely west of Plympton, change-over points being provided at Plymouth North Road, Millbay and, for freight, at Laira and Tavistock yards.

Most of the estimated improvements in the Report were based on the full scheme; it was claimed that the

*The first Great Western electrification proposals embraced all lines west of Taunton, including, incredibly, the many rural single-track branches, and all three lines seen here would have been electrified. A three-car suburban diesel unit skirts the Looe estuary on a working from Liskeard to Looe on September 2 1973 (*left*), while ex-GW 4700 Class 2-8-0 No 4706 leaves Churston (*below*) with the 13.25 Paddington-Kingswear on July 4 1959 and 1400 Class 0-4-2Ts Nos 1451 and 1421 wait at Tiverton (*below left*) on July 1 1963 to depart respectively for Dulverton and Tiverton./*J. H. Cooper-Smith; D. S. Fish; R. C. Riley

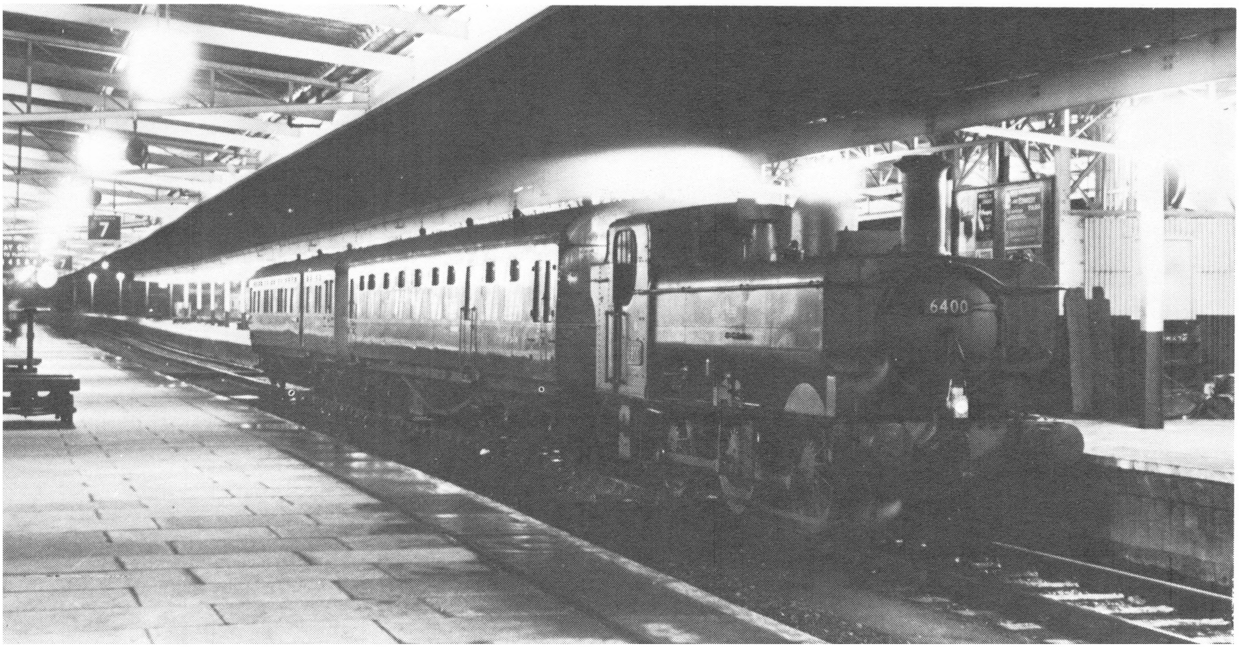


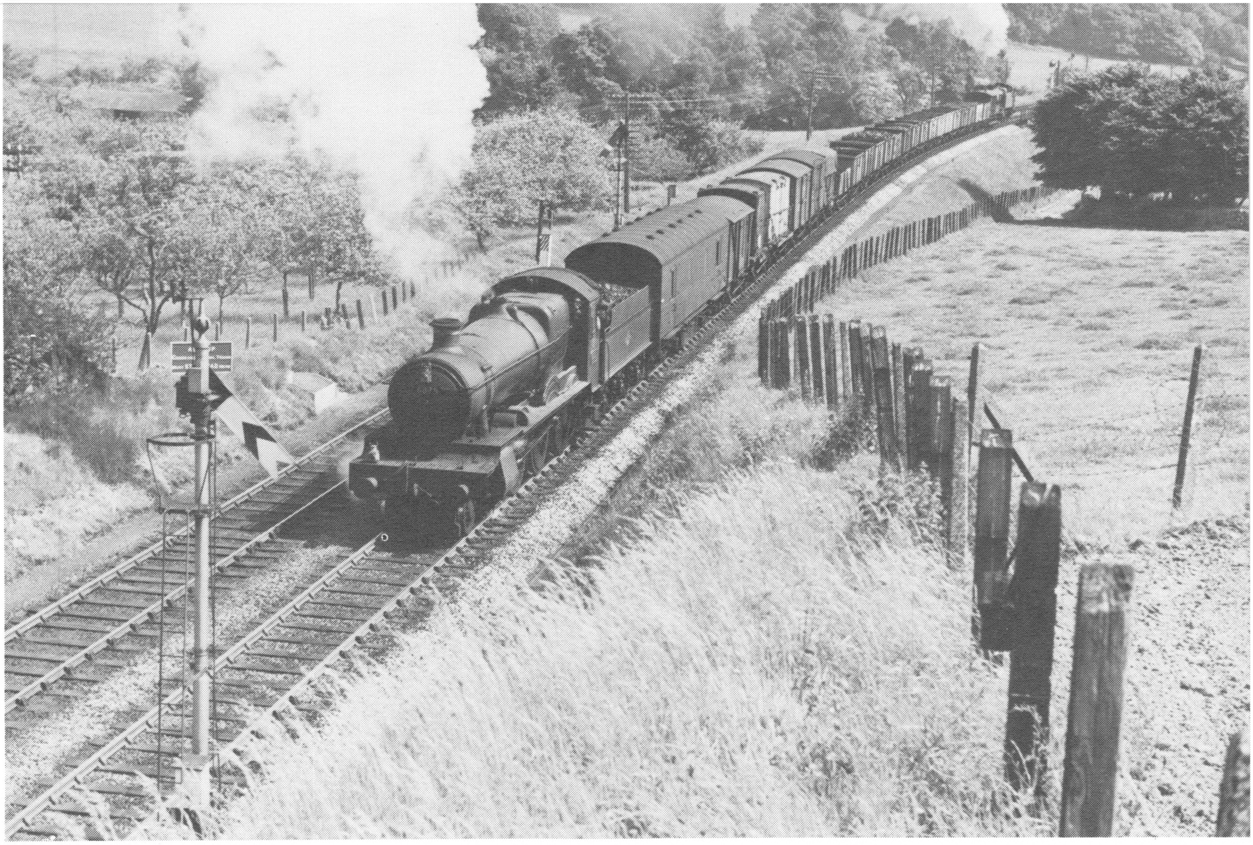




*In electrification terms, just how meagre some of the traffic flows on the GW branches were is amply illustrated by 1400 Class 0-4-2T No 1450 rolling into Uffculme on June 22 1963 (*above*) with the single-coach 11.25 Tiverton Junction-Culmstock and by the two-coach Exeter train seen leaving Heathfield on the Teign Valley line (*left*) behind 4575 Class 2-6-2T No 5530 on April 10 1958. Even the Plymouth local services would have been marginal; 6400 Class 0-6-0PT No 6400 has a light load of just two coaches as it arrives at a deserted North Road station (*below*) with a local from Saltash just before midnight on December 13 1959.*
/Michael J. Fox; J. A. Coiley; J. R. Smith
J. R. Smith

But as the second, more realistic proposals recognised, electrification would certainly have eased operating problems on the Devon banks, for double heading or banking — or both — was the rule in the steam era with any train of substance. With 5100 Class 2-6-2T No 5153 banking vigorously at the rear, ex-GW 6800 Class 4-6-0 No 6875 Hindford Grange *climbs slowly towards the summit at Dainton (*above right*) with a down freight on June 1 1960, while the prototype Hall Class 4-6-0 No 4900* Saint Martin *and King Class 4-6-0 No 6004* King George III *sweep down towards Totnes with the heavy 12.00 Penzance-Manchester-Glasgow through train on August 7 1956.*
/L. Elsey; T. E. Williams





Dieselisation in the 1960s has in many ways achieved what was desired of electrification in the 1920s, for greater hauling capacity rather than speed was the backbone of the GW proposals. Class 47 Co-Co No 47088 Samson *swings over the crossing and into Paignton with a train for Exeter on April 8 1975.*/Mark Wilkins

overall average speed likely to be achieved by electric traction between Taunton and Penzance would be 57·1mph with a load of 518 tons, compared with the existing average of 47·25mph with a load of 257 tons with steam. It was further estimated that 8·3min could be saved going down from Taunton to Plymouth (12·2min up) and 23·4min thence to Penzance (27·2min in the reverse direction). The 381 locomotives required for steam traction would be replaced by 233 electric locomotives, of which 56 would be of Express type, costing £12,000 each and either of 1400-1600hp (2-4-2s or 4-4-2s) or 2100-2400 hp (2-6-2s or 4-6-2s); 173 General purpose type, costing £8,000, of 1200-1400 hp. (Bo-Bos); and four "Accumulator" type (presumably meaning battery-electrics) costing £6,500.

Additionally, 32 steam heating vehicles would be required for heating stock not confined to the area, the suggested allocations of these being Penzance 3; Truro 3; Plymouth 5; Newton Abbot 7; Exeter 3; and Taunton 11.

It was proposed to adopt a high voltage direct current system with overhead conductor, and the catenary would have embraced 498 route miles and 882¾ single track miles, as well as two miles of the Southern and 16½ miles of sidings, and included the already-authorised Taunton-Norton Fitzwarren widening.

Originally, the GWR operating people proposed that all trains from the east should run through Taunton to their first booked stop, where electric locomotives would take over, but it was eventually agreed that this should be restricted to three trains in each direction — the "Cornish Riviera" and "Torbay Limited" trains and the Taunton Car (between Taunton and Wellington). It was recognised that it would be more logical for the Southern to operate the Bodmin (GW)-Wadebridge service and an estimate of the cost was obtained from Waterloo — which must have caused a few wry smiles!

The original stipulation that the system should be capable of operating 14-coach trains or 70-wagon goods trains of 1000 tons was met, and it was suggested that work proceed in four sections (Penzance-Par; Par-Plympton; Plympton-Exeter; and Exeter-Taunton) and that each take two years to complete.

Like its predecessor's views on electrification, the Western Region was somewhat individualistic in its approach to dieselisation. It opted for diesel-hydraulic rather than diesel-electric traction, and all three of its now-extinct hydraulic types, the 'Warships', 'Westerns' and 'Hymeks', were regular performers west of Taunton. Here, Hymek No D7027 accelerates away from Dawlish along the sea wall with a Paddington-Paignton train on August 3 1965.

All that remained to be done was to cost the project. This exercise was undertaken in great detail (including such items as the savings in ash disposal) but appeared to throw up some problems not explained in the Report. For example, the cost of the Rogerstone locomotive coal train was shown as a complete saving, which clearly overlooked the needs of the engines off the two remaining steam-hauled expresses at Plymouth. Perhaps they could have gone round to the Southern shed, but a few tons of coal would still be required for the Torbay engine.

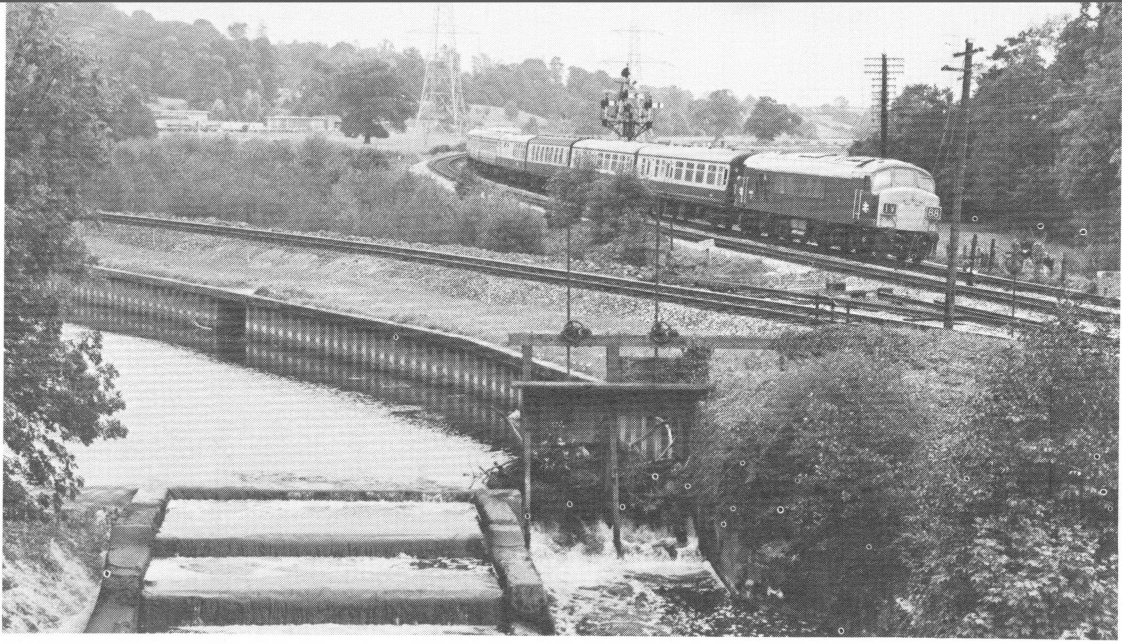
A saving of £350,000 was said to be possible if petrol railcars were used instead on some branches, but there is no mention of how freight traffic would be hauled. Single manning of the electric locomotives, said the Report, would save £27,948 (note the preciseness of the figure!) and the attendants on the steam heating vehicles — for which oil-fuel plants had to be built — would double up as motormen in the summer and so save money.

Total estimated cost of the scheme was £3,371,148 or £1,755,185 for the Plympton-Penzance half-measure! Both figures excluded the cost of the electric locomotives, which would have been set against renewals.

The full scheme gave a return of 7·3 per cent on capital outlay, and the cheaper scheme 5·2 per cent. To get some idea of present-day costs, a multiplying factor of between 10 and 15 should be used.

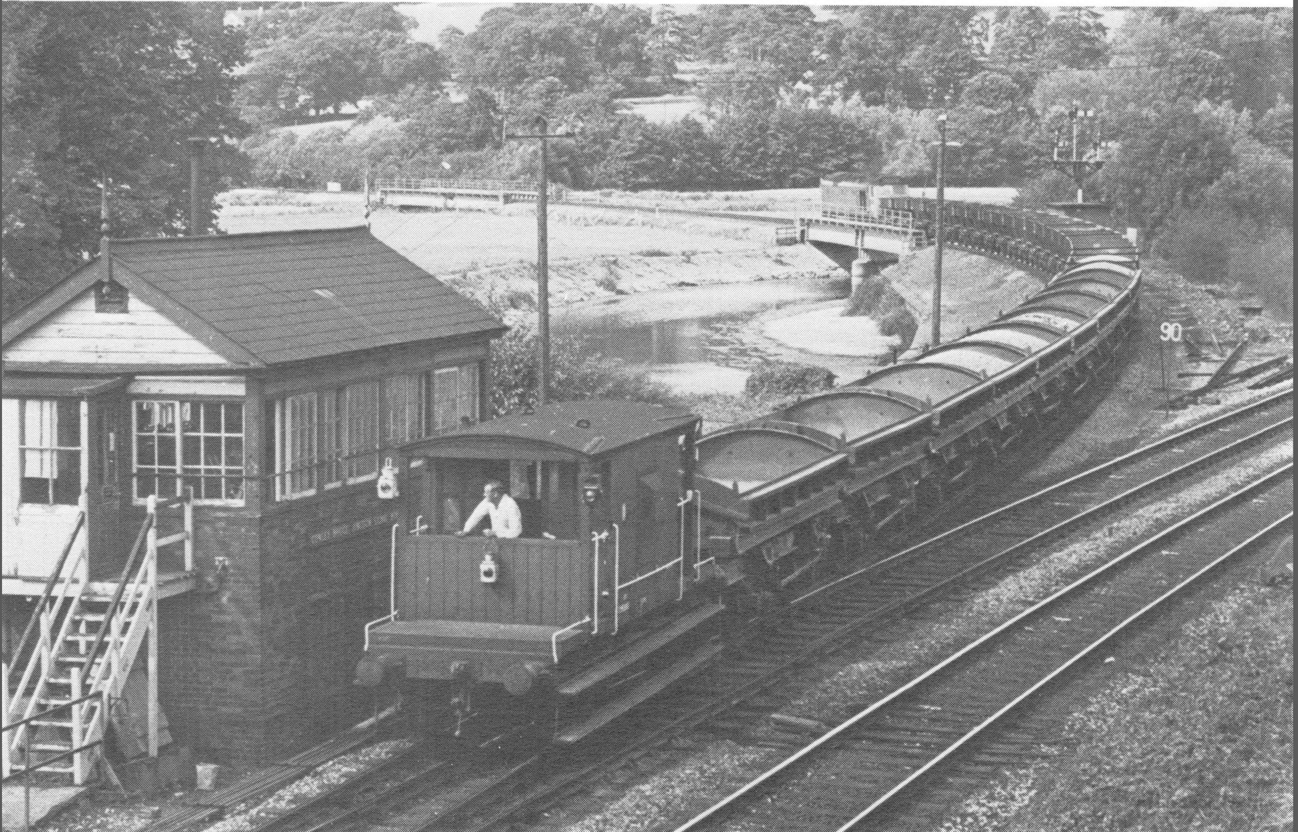
At the Board meeting of 1 July 1927 it was stated that the Report had been received but not examined in detail. A month later, Sir Philip had rendered his expense account — £1094 in excess of the limit laid down — and the General Manager was instructed to settle the account for half the excess claimed. The Report went entirely unremarked!

A brief note in the Board minutes of October 1929 refers to electrification proposals for the London suburban lines being considered in preference to those for the main line, but then nothing more is heard for almost a decade until a new General Manager (Sir James Milne), at a Board meeting on 11 February 1938, suddenly refers to minute 8 of 29 July 1927 (Sir Philip's £1094 extra!) and suggests, because of the increase in steam operating costs, that the Taunton-Penzance electrification scheme be revived and



Exeter is a traditional bottleneck on the West of England main line, and electrification alone would have done nothing to ease the problem of Southern Railway trains from Exeter Central for the North Devon lines having to traverse GW metals from St. Davids as far as Cowley Bridge Junction. Even today, with all passenger services save those to Barnstaple withdrawn, the section of line is still very busy. Sweeping round towards Cowley Bridge Junction with an express from the Midlands (above left) is an unidentified Class 45 on September 4 1975, while at a more leisurely pace Class 50 No 50017 takes a train of empty ballast wagons returning to Meldon Quarry through the junction (below left) and on to the short single track section of the Southern line across the river bridges. To replace its withdrawn diesel-hydraulic locomotives, the Western Region has acquired Class 25 and Class 31 diesel-electrics; Brush Class 31 No 31112 rolls a Newton Abbot-Exeter local into St. Davids (above right) on July 13 1976. In contrast,when the 'Warships' were withdrawn from the joint WR/SR Exeter-Waterloo via Salisbury service, they were replaced by less powerful SR Class 33 locomotives, although there are now plans to employ Class 47 or 50 units on this service. But all this is still in the future as Warship Class 42 No 811 Daring *pulls away from St. Davids (below right) and faces the short, sharp climb to Exeter Central on the first leg of its journey with the 16.00 to Waterloo on September 1 1971.*

/L. A. Nixon; L. Bertram; Brian Morrison; J. H. Cooper-Smith



0000
THE LIGHTS WILL GO OUT WHEN ENGINES OR VEHICLES ARE APPROACHING

updated estimates prepared. It is recorded that the Board concurred and agreed that Messrs. Merz and McLellan should be asked to investigate and produce a report and estimates for a fee of £2100, plus out-of-pocket expenses — on which there was no limit!

Sir James wrote the same day to Merz and McLellan and the Report was duly prepared and submitted a year later. One senses a rather more realistic approach to the problem this time, but the same dead hand of the Company's officers appears with the stipulation that all trains passing through Taunton must be allowed to proceed to the first booked stop without an engine change. And this time the condition did not get waived; on a summer Saturday it would have involved a total in both directions of over 40 trains, although on weekdays the two named expresses would again have been the sole non-stops.

The new consultants very quickly came to the rather obvious decision that the traffic density simply did not justify electrification of most of the branch lines, and they therefore based their proposals on a scheme embracing the main route from Taunton to Penzance plus the Kingswear and Brixham branches, Par-Newquay, Par-Fowey-Lostwithiel, and St. Dennis Junction-Burngallow, giving a route mileage of 231.83 and a track mileage of just over 583. It was assumed that the average speed of trains would remain unaltered, except for a few such as the "Cornish Riviera", for which a 20min reduction would be achieved between Taunton and Penzance. These decisions ensured that comparisons with the previous scheme would be difficult, thus avoiding embarrassment for all parties concerned!

Working on the assumption that a 3000V dc overhead system would be adopted, it was proposed to displace 165 steam locomotives with as many as 164 electric locomotives, as well as an unspecified number of multiple-unit sets for the Plymouth local services. The total of 164 locomotives would consist of eight

Class 1 2-6+6-2s of 2550hp weighing 140 tons, 40 Class 2 of 2100hp weighing 122 tons, 55 Class 2a of 1400hp weighing 90 tons, and 61 Class 3 Bo-Bos, power and weight unspecified.

It was not proposed to employ regenerative braking, although the locomotives would incorporate oil-fired boilers for steam heating purposes. Single manning of the traction units was proposed.

Concern was expressed at the number of light engine movements that appeared to be necessary at Taunton and Newton Abbot, and sums of £60,000 and £10,000 respectively were thought to be necessary to cover the cost of improvements in the track layouts to facilitate speedy motive power changeovers.

The whole scheme, which it was suggested could be completed in four years, would have required a gross expenditure of £5,133,800, or a net outlay of £4,361,100. Allowing a saving in working expenses of £100,500 per annum, offset by £67,786 for depreciation, the net credit came out at £32,714, giving a miserly 0.75 per cent on the capital outlay.

Such a poor figure would clearly be unacceptable to the Board, so an exercise confining the conversion to the Taunton-Plymouth section of the main line, plus the Kingswear branch was investigated, but without any improvement in the forecast figures.

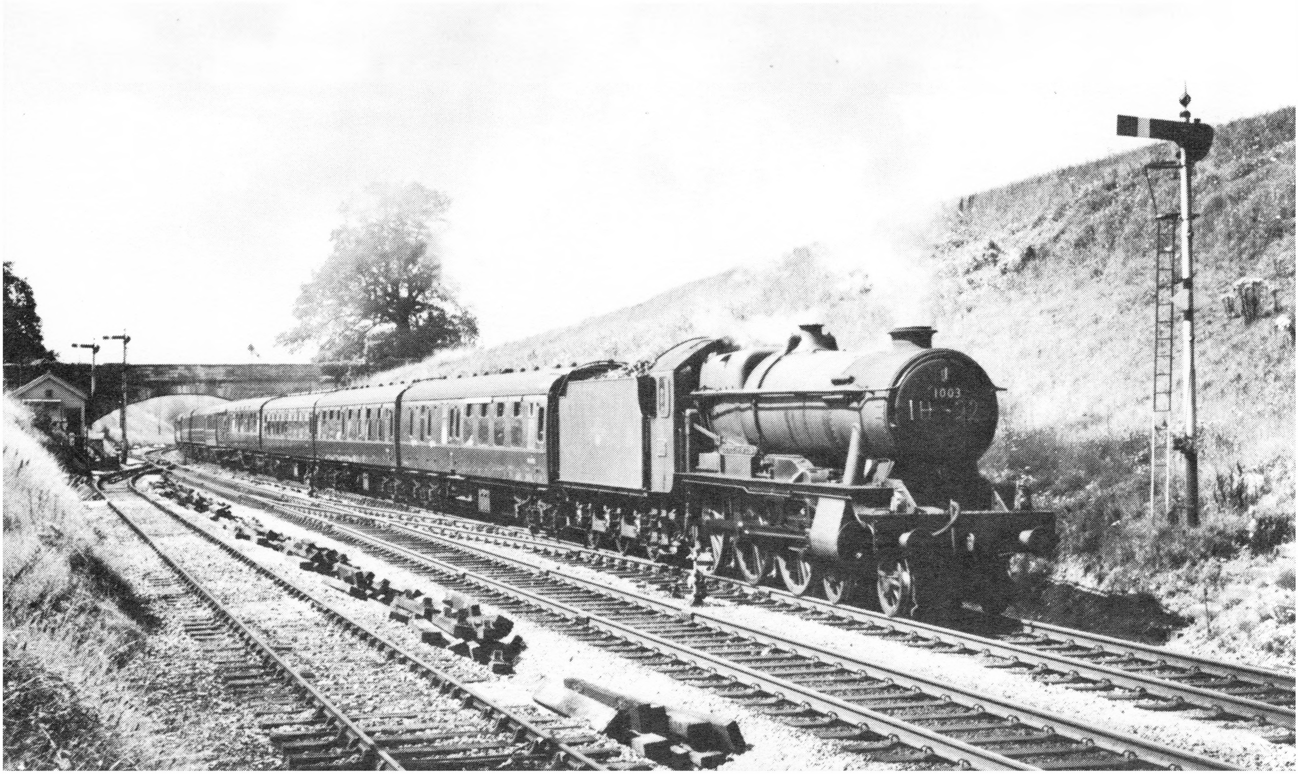
The outcome was inevitable: the General Manager informed the Board of the main conclusions of the Report at its meeting of 24 March 1939, and it was agreed no further action be taken. The results of this second investigation were subsequently published, but within six months the War put an end to any lingering speculation.

In retrospect, one can but wonder why it was that the heavily-trafficked London-Bristol, Wootton Bassett-Severn Tunnel Junction with Bristol-Filton triangle was not considered on either occasion, despite the inevitability of mixed electric/steam working over some sections of the routes, for this was proposed by the Operating Department for the West Country scheme. The complete absence of any suggestion that increased patronage (and hence revenue) might have flowed from the conversion is also curious, especially in view of the greater carryings then being enjoyed by the Southern Railway as a result of its various main line electrification schemes to the South Coast.

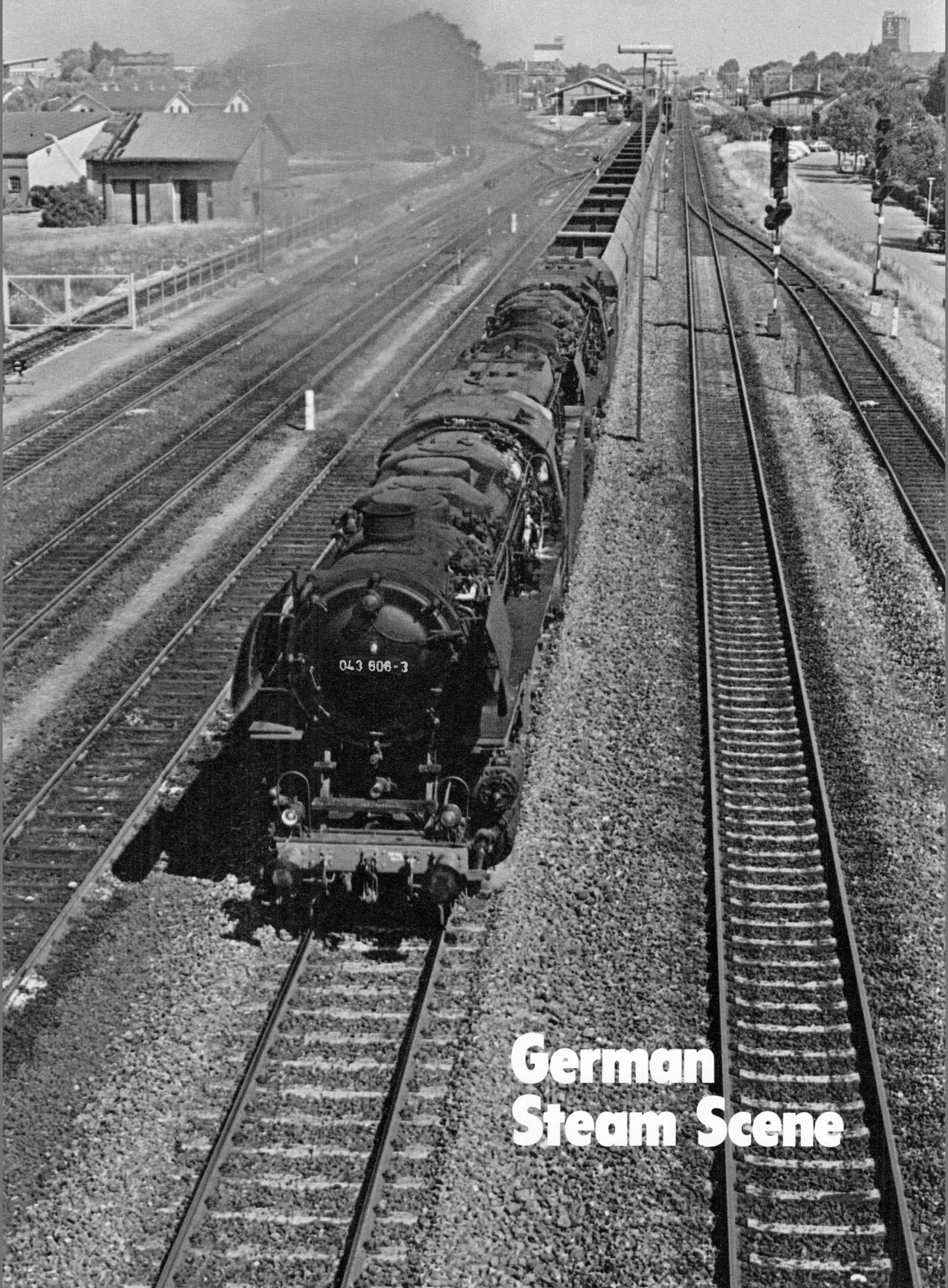
It seems clear that the consultants enjoyed less than full-hearted cooperation from the very conservatively-minded railway operating officials, and that as a result neither Report was able to explore the real potential of electrification on the Great Western. Had it had a more enlightened outlook, or perhaps a General Manager of the calibre of its Southern neighbour, the Great Western could have stolen a significant lead on its rivals, with copper catenary replacing its traditional copper-capped chimneys!

Hurrying over the summit by Whiteball signalbox on August 18 1962 (below) *comes 1000 Class 4-6-0 No 1003* County of Wilts *with the Saturdays-Only 10.05 Kingswear-Wolverhampton.*/Michael J. Fox

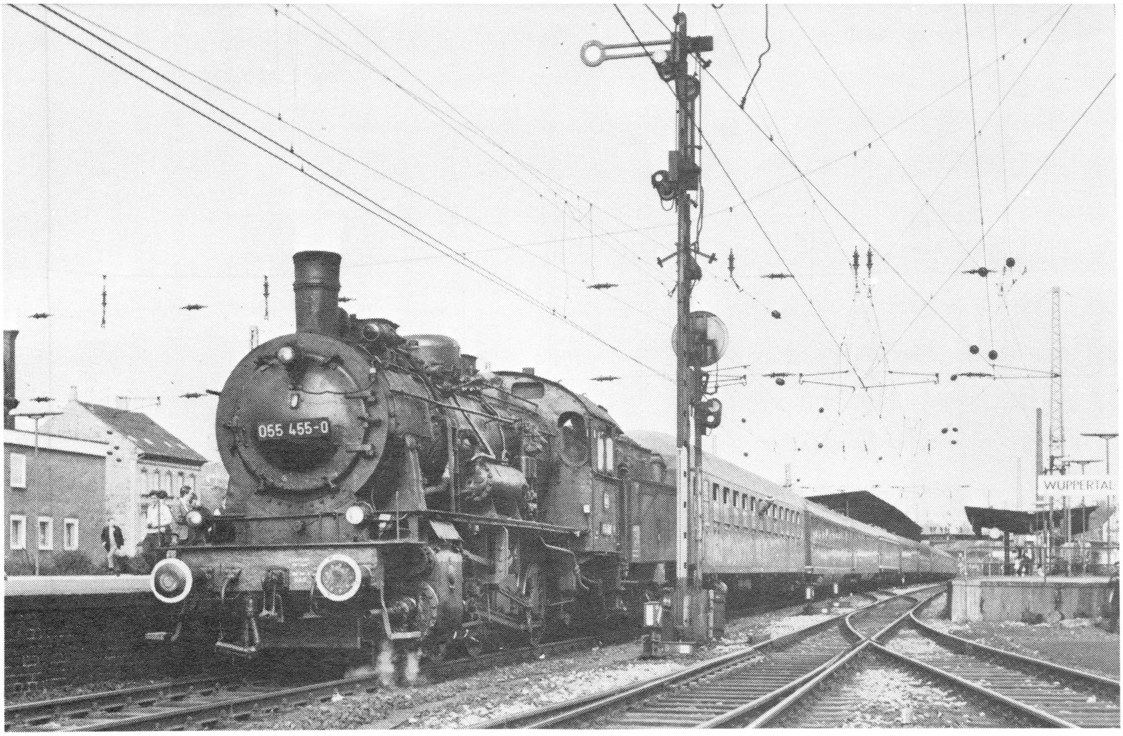
Threading the lush Fowey valley on a sunny day in May 1975 is Class 50 No 50001 on a Penzance-Paddington train. The more realistic 1939 electrification proposals embraced only this, the main line to Penzance, plus the branches to Kingswear, Brixham, Newquay and Fowey./J. H. Cooper-Smith



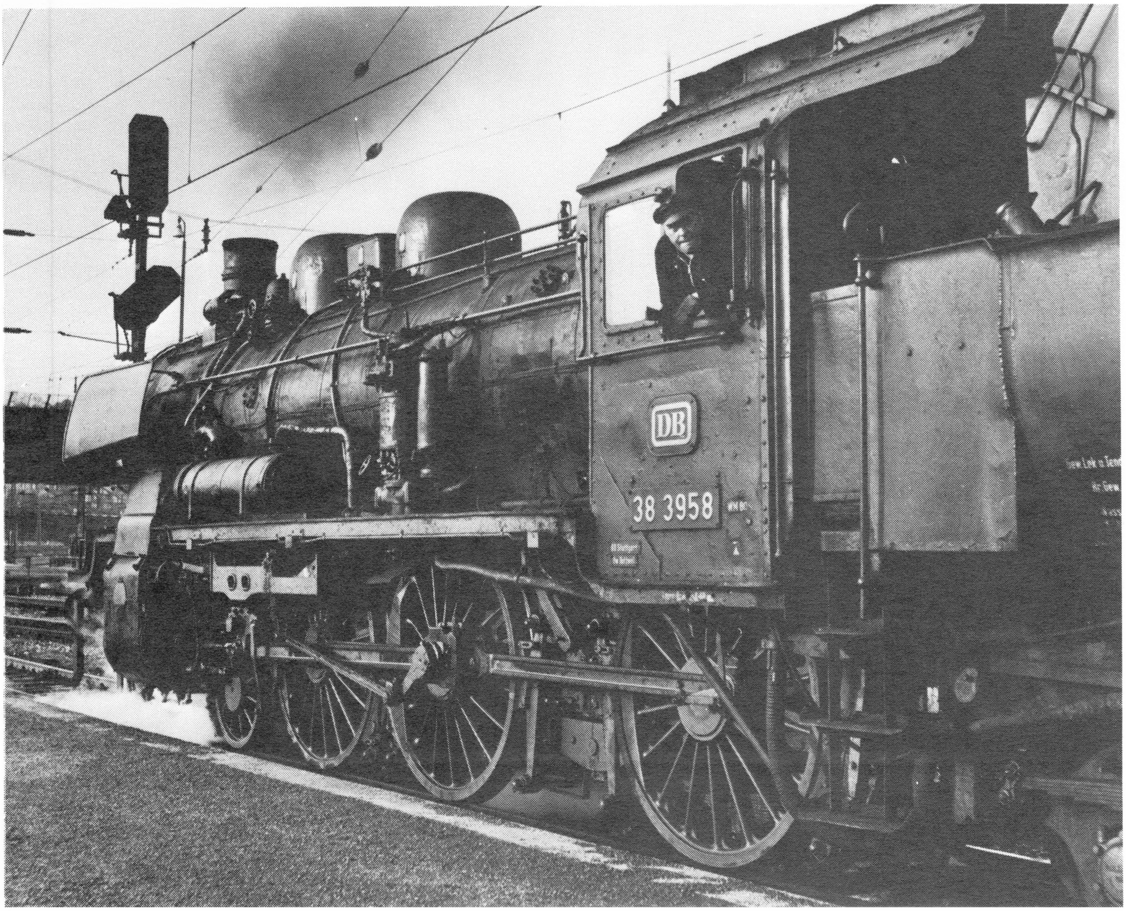
1A69

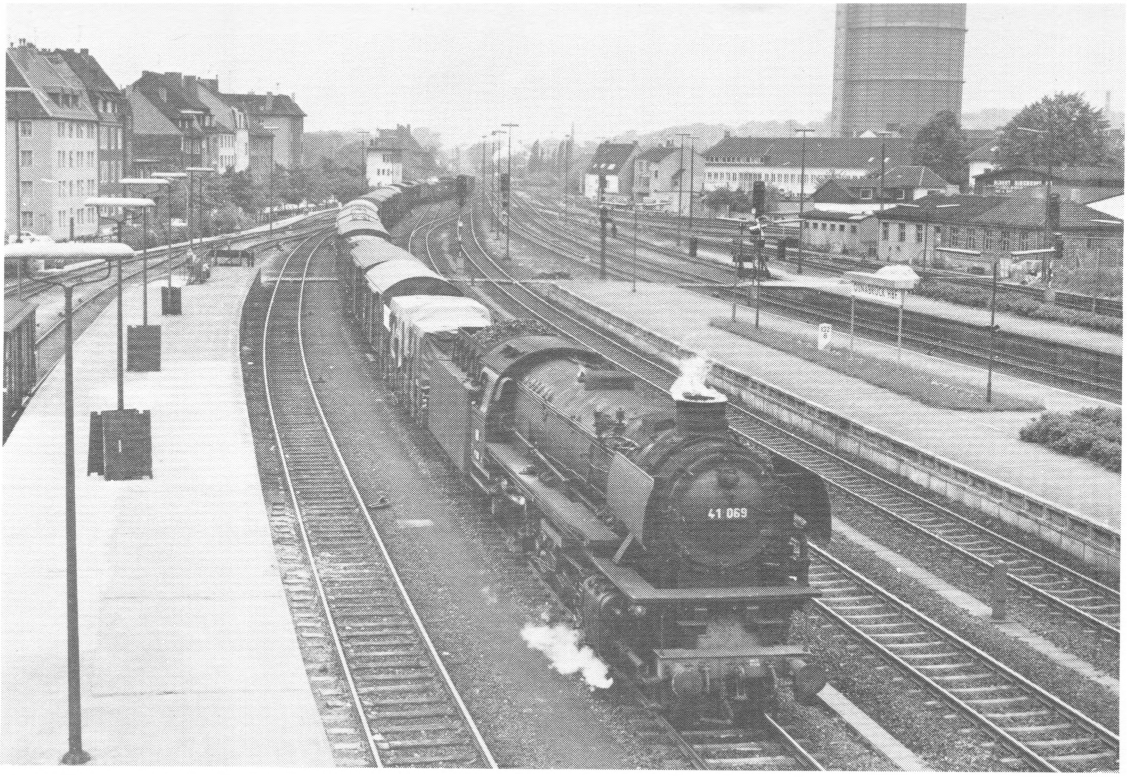


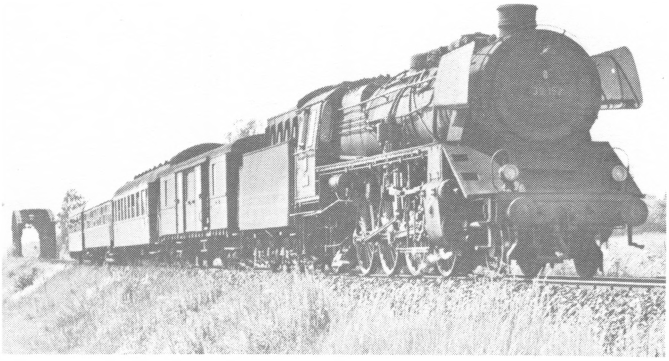
German Steam Scene



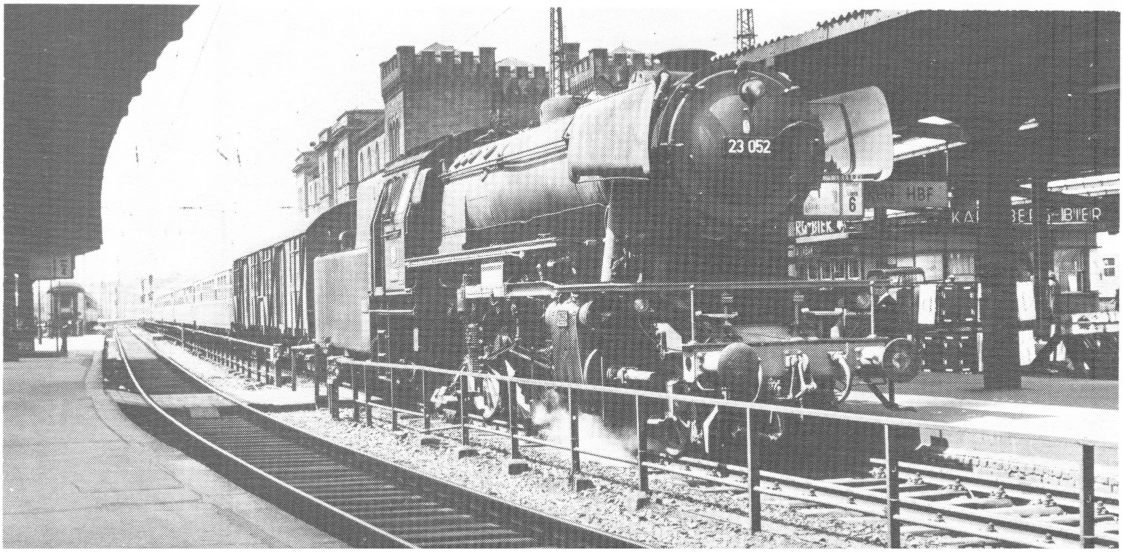
*With massive Clan 043 No 043 606-3 at its head, a heavy double-headed hopper train from Emden docks passes south through Leer (*left*) while DB Class 055 (ex-Prussian G8) 0-8-0* ***No 055 455-0 arrives at Wuppertal-Oberbarmen (*above*) with the LCGB "Ems und Wupper"*** *sonderzug from Marienheide on April 30 1972. Also of Prussian parentage were the once-numerous DB Class 38 (Prussian P8) 4-6-0s; No 38 3958 waits to depart from Ulm Hbf (*below*) with train E4748, the 18.32 to Sigmaringen on May 23, 1967./*J. S. T. Tomlinson; Brian Stephenson (2)

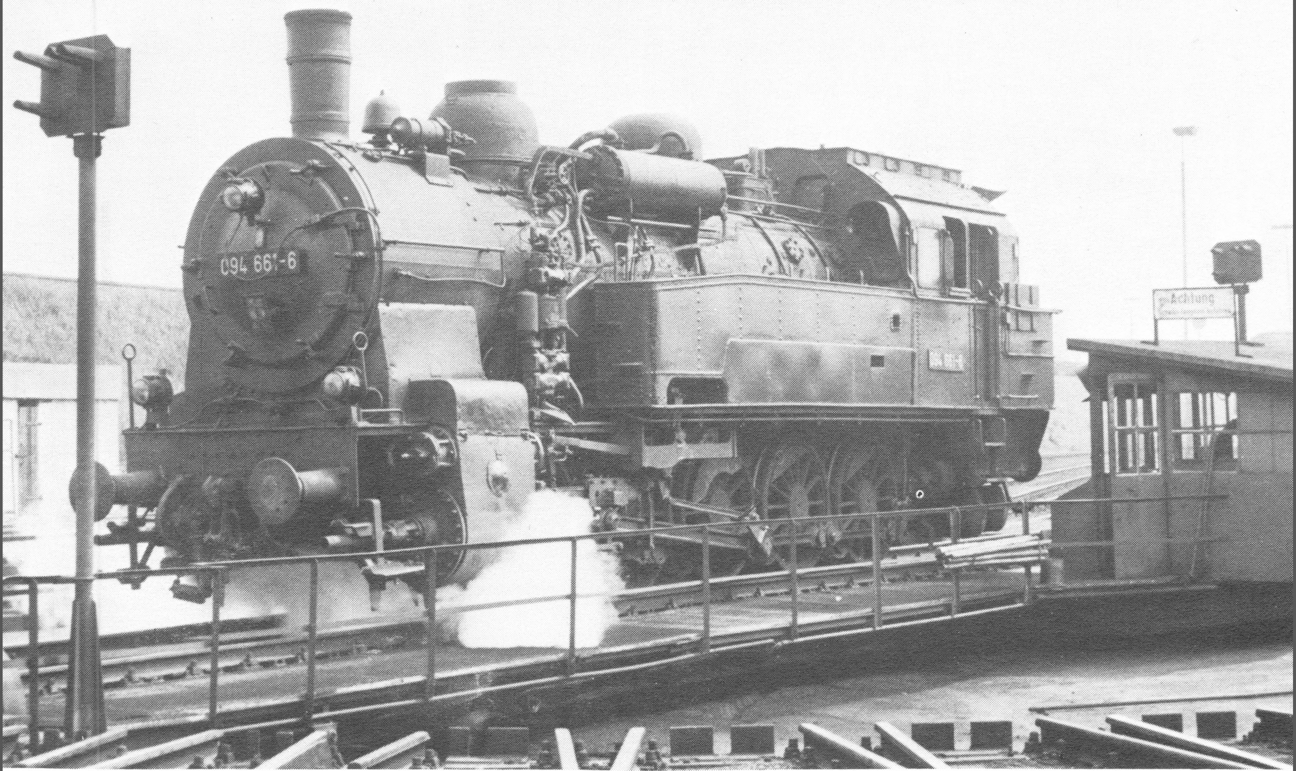


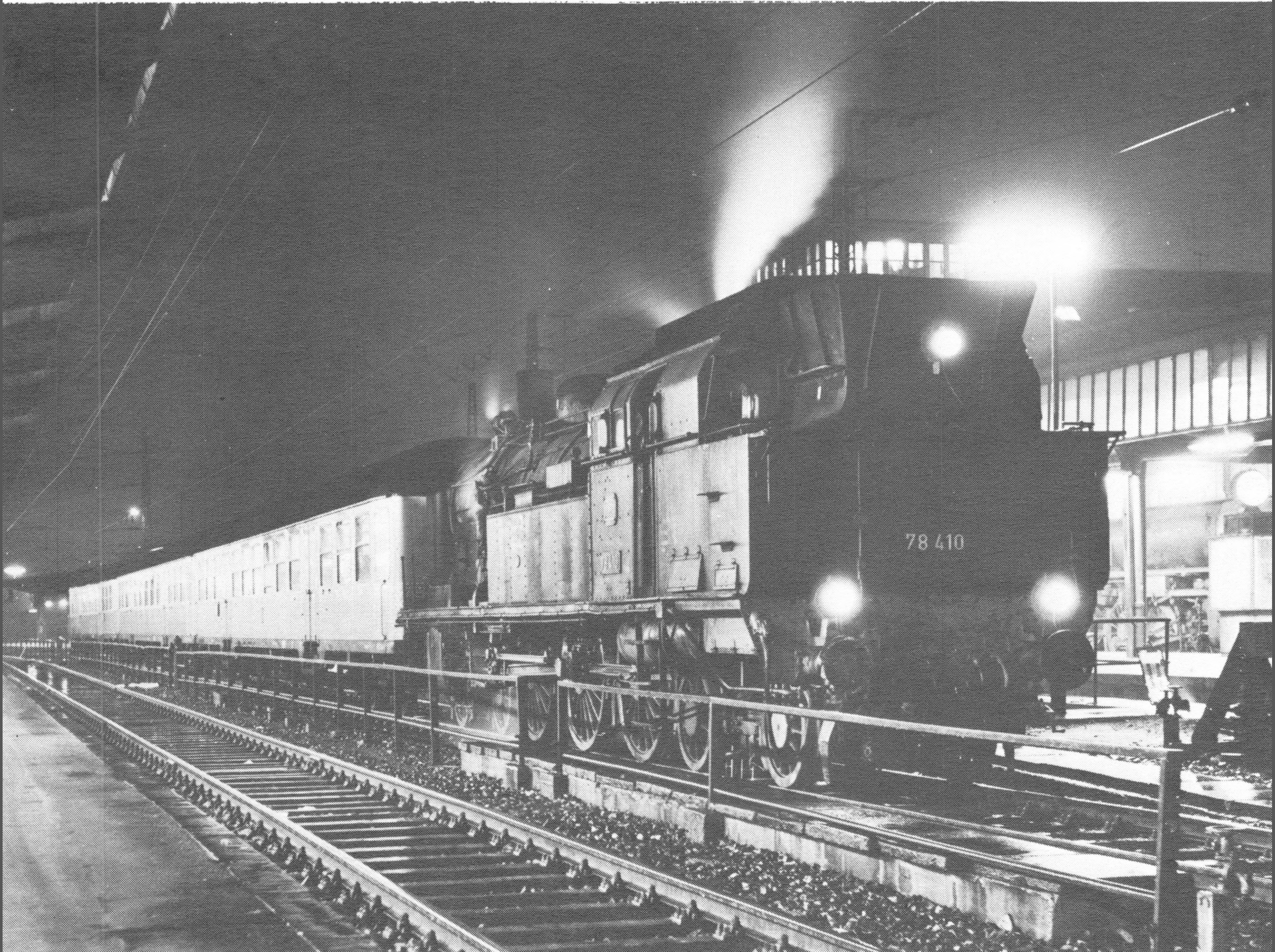


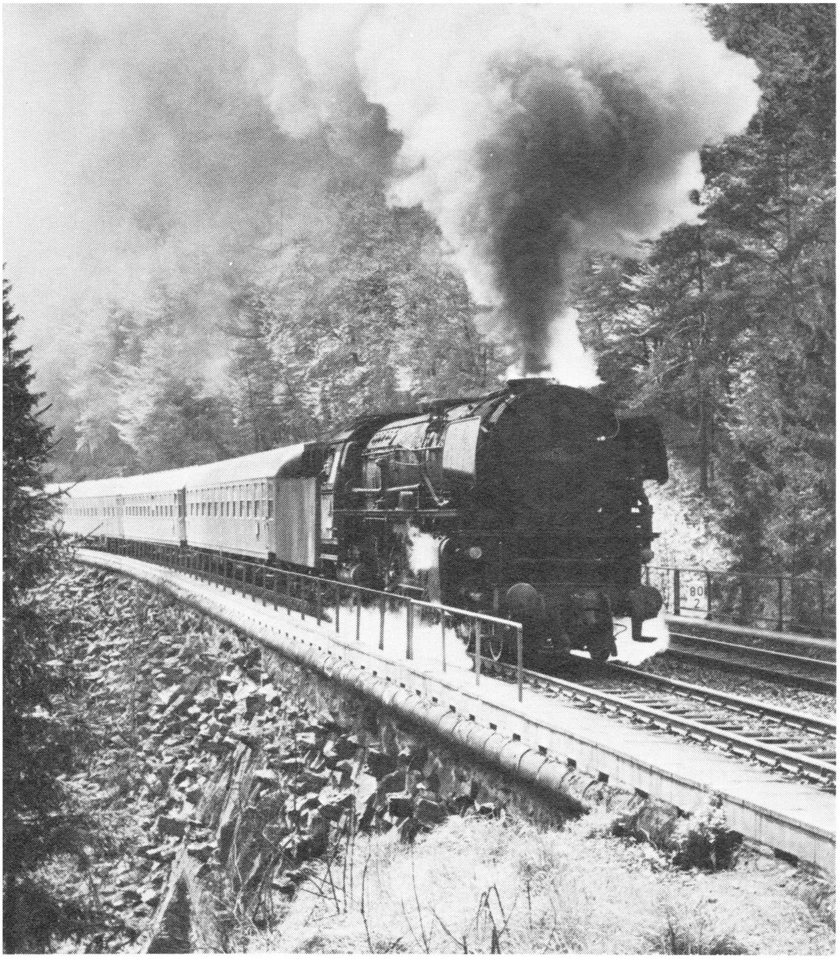


With a wisp of steam from various auxiliaries curling up around the perimeter of its chimney, DB Class 41 2-8-2 No 41 069 drifts through Osnabruck Hbf (above) with an eastbound freight from Bentheim. Another 2-8-2, DB Class 39 No 39 152, has a light load on its tail (left) as it canters across country near Langenhagen with the 13.15 Ulm-Lindau on August 5 1964. Steam, diesel and electric traction will all power the 13.10 from Saarbrucken (below) at various stages on its trip to Munich on May 30, 1965; DB Class 23 2-6-2 No 23 052 is ready to leave Saarbrucken Hbf for Landau where a V200 diesel will take over for the short run to Karlsruhe and the beginning of electric traction. Over 1200 Class 094 (ex Prussian T16) 0-10-0Ts were built between 1914 and 1924 and some of the last survivors were stationed at Hamburg Rothenburgsort for shunting and local trip work; No 094 661-6 poses on the turntable (above right) on May 9 1972, just a few months before steam working in the Hamburg area ceased. On a wet May evening in 1965, another Prussian type, the T18 4-6-4T, DB Class 78, waits in the rain to leave Saarbrucken Hbf (below right) with the 21.55 to Turkismuhle./Brian Stephenson (4); Keith Read

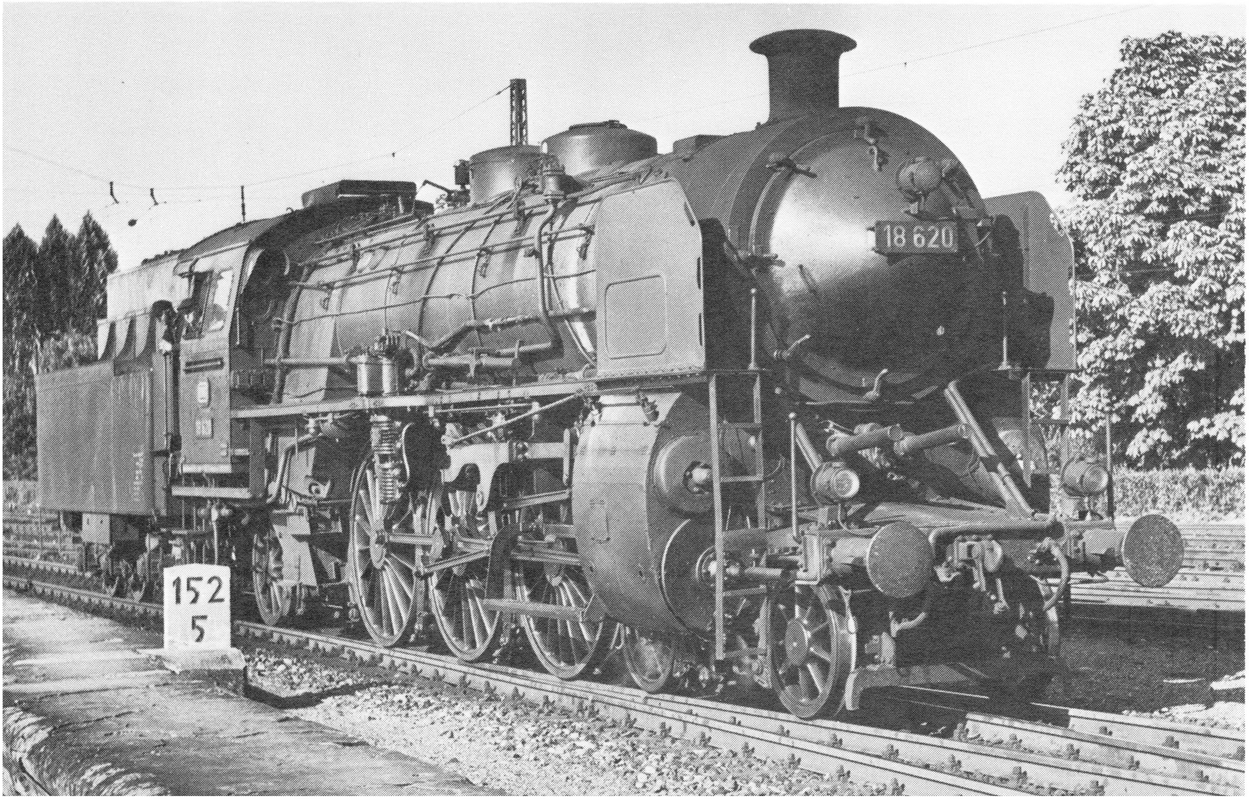


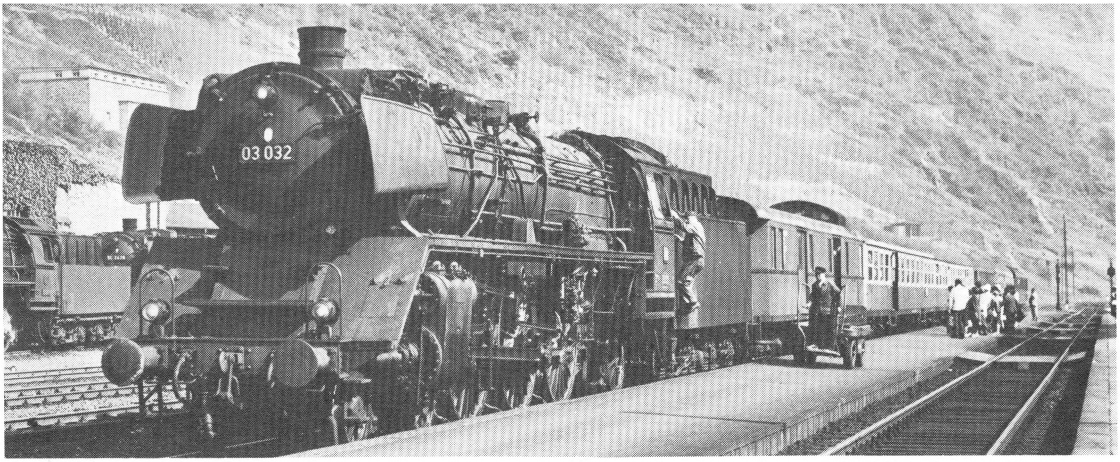

094 661-6
Achtung

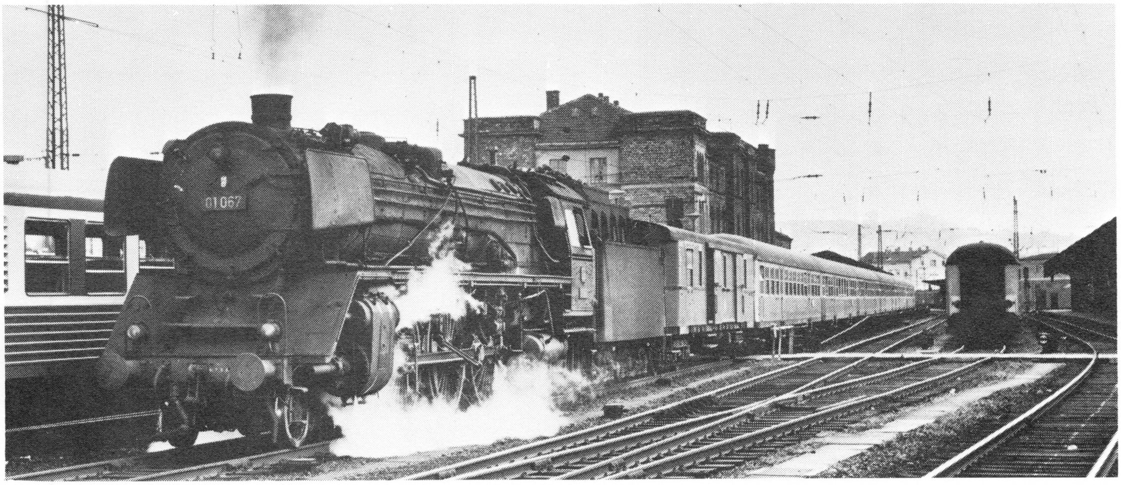

78 410

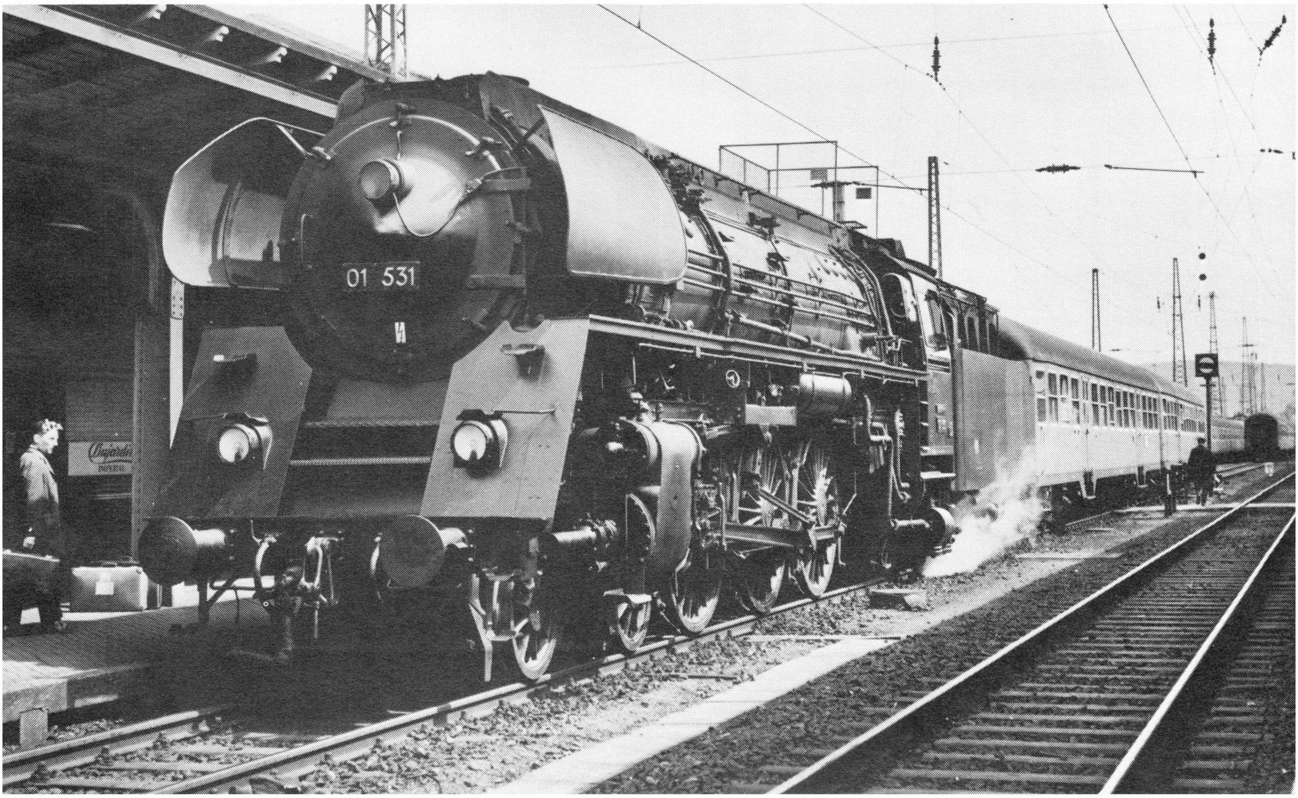


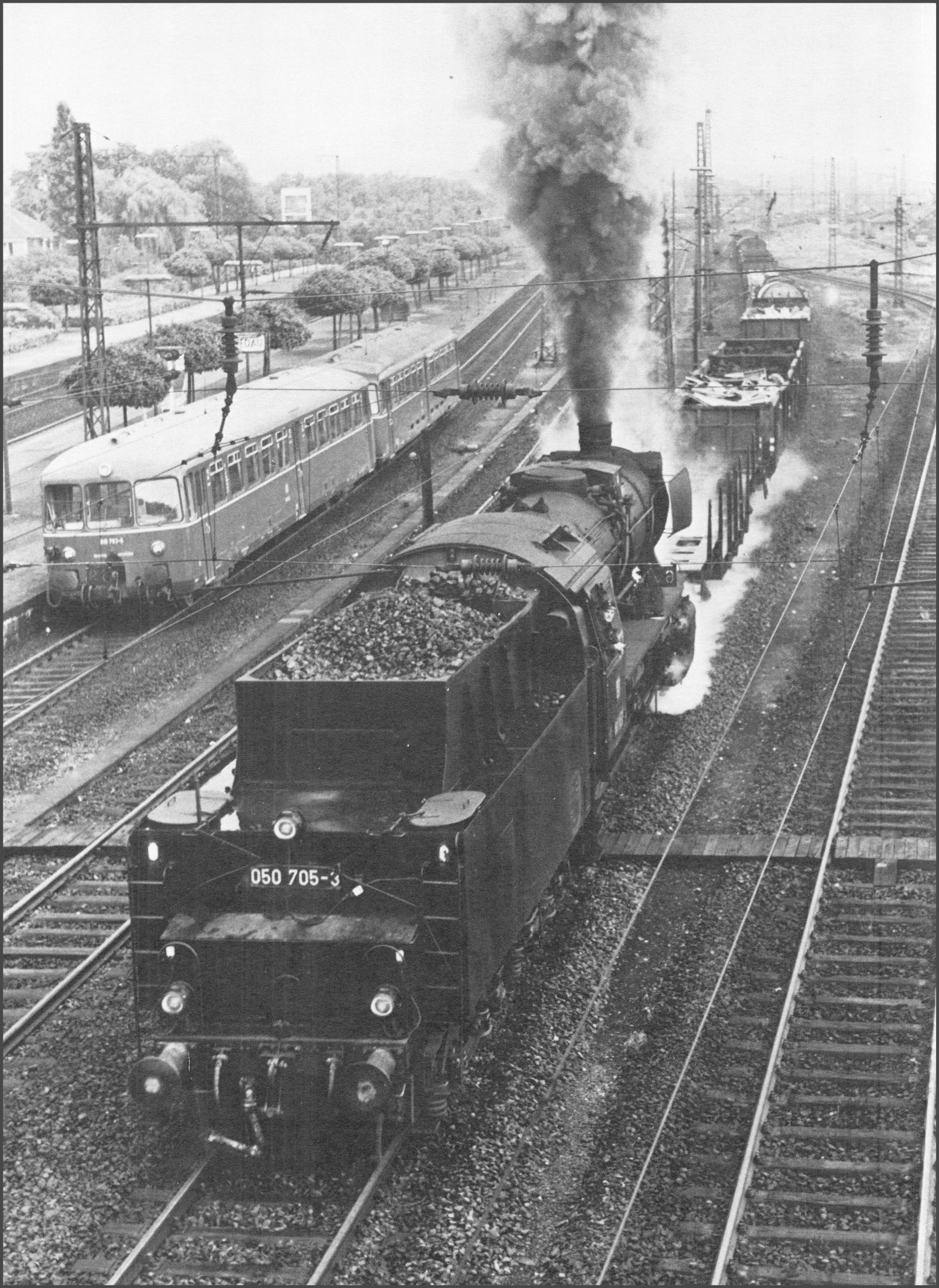
Pacifics-a-plenty: reboilered Class 001 4-6-2 No 001 131-2 storms up the 1 in 40 Schiele Ebene (literally 'inclined plane') with the 07.38 Stuttgart-Hof E-train (left) *on May 17 1972, while one of the last ex-Bavarian State Railway Pacifics to survive, DB No 18 620, suns itself outside Lindau* (below) *on August 5 1964. One of its crew makes a rapid exit from the cab* (top right) *as DB Class 03 4-6-2 No 03 032 comes to a stand at Cochem with the 09.22 Koblenz-Trier train on August 22, 1964. Leaving Saarbrucken Hbf in fine style* (centre right) *on May 30, 1965 is DB Class 01 4-6-2 No 01 067 at the head of the 11.26 E-train to Emden Sud, while its East German counterpart, DR Class 01.5 oil-fired Pacific No 01 531 arrives at Bebra with train D.190, the 04.57 Cottbus-Monchengladbach, on May 20 1967.*
/Keith Read; Brian Stephenson (4)

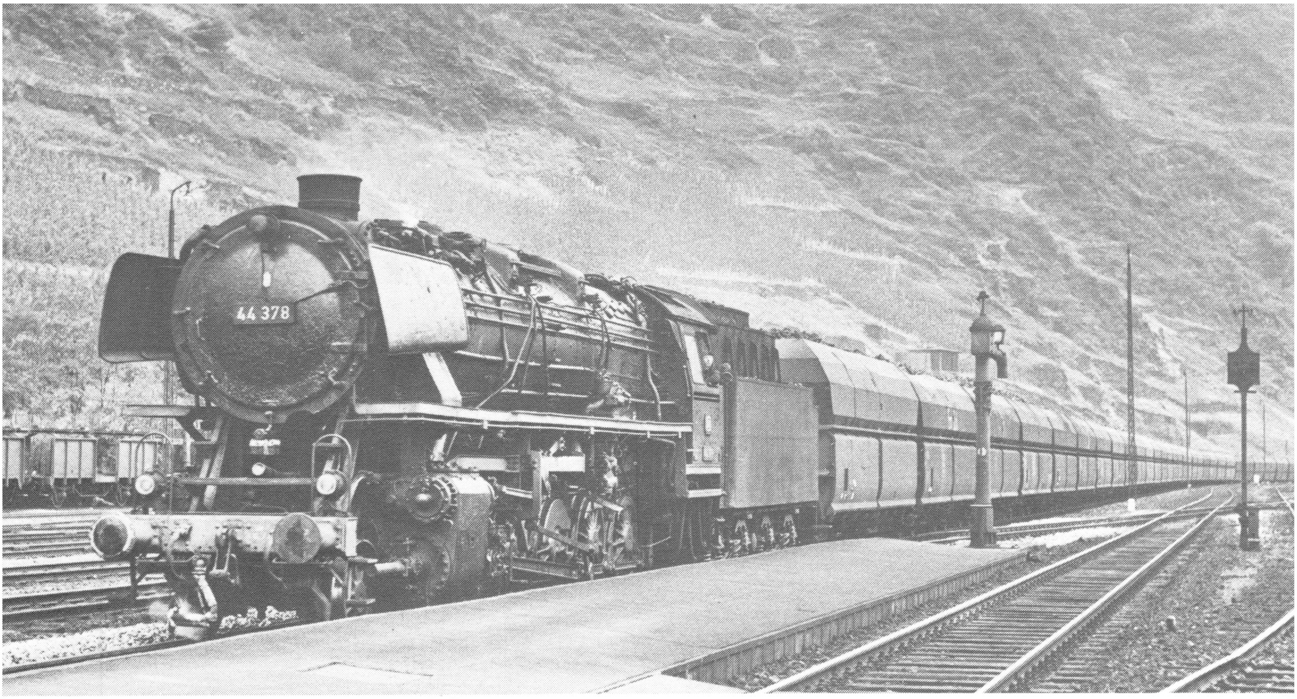



03 032

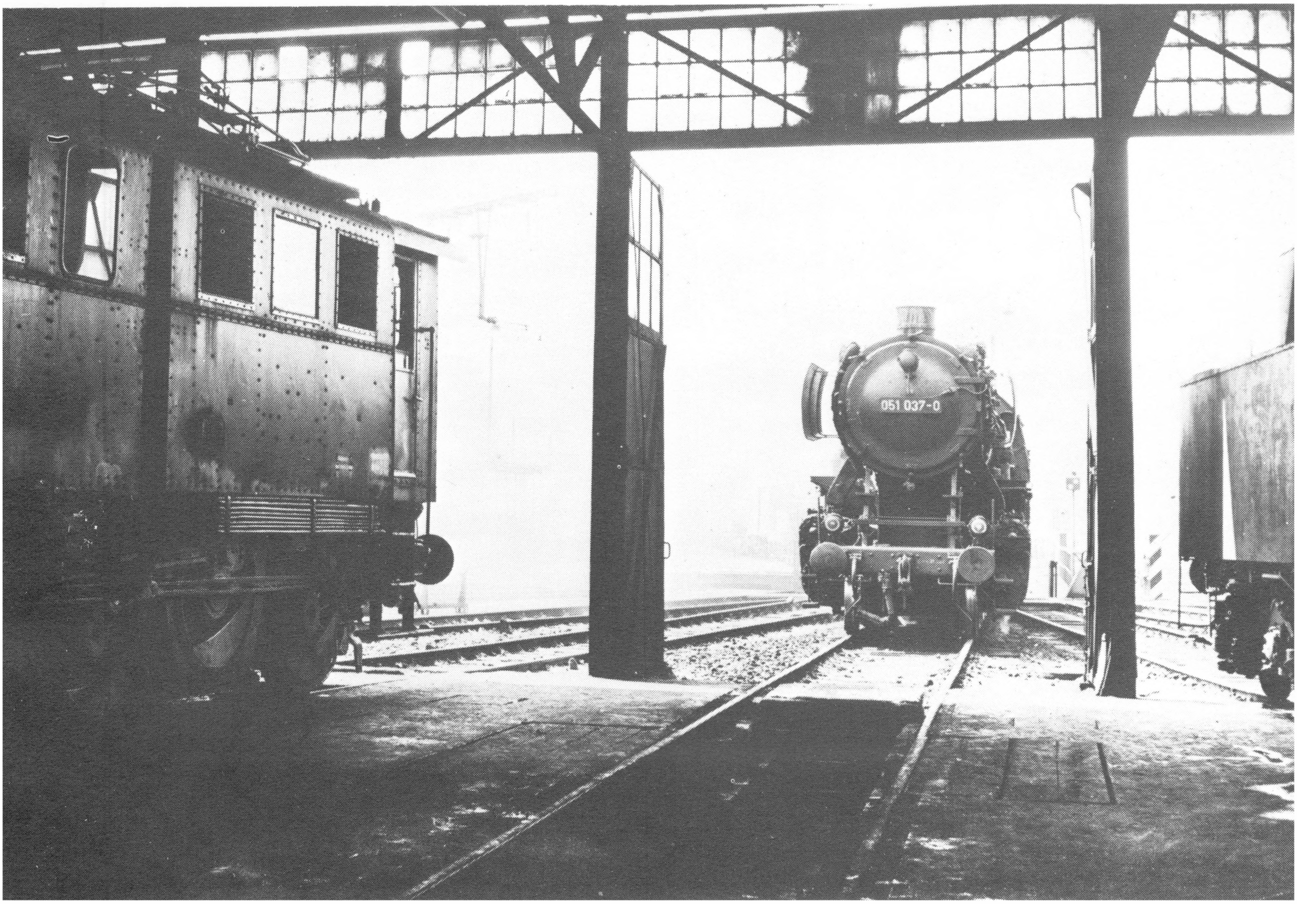

01 067


01 531

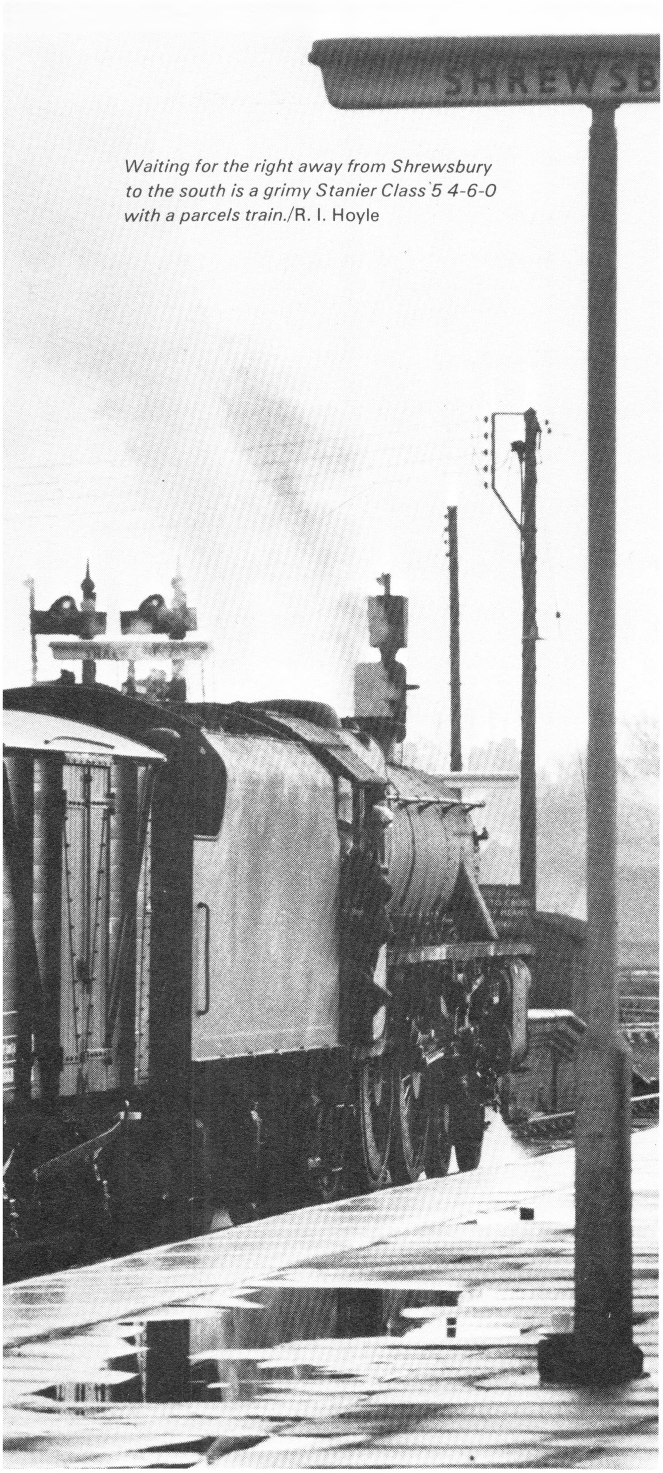

050 705-3



Backbone of DB freight motive power for many years were the Class 44 and 50 2-10-0s. Class 50 No 050 705-3 blackens the skies at Duisburg Wedau (left) as it sets out tender-first with a heavy mixed goods for Oberhausen on August 8 1974, while sister No 051 037-0 noses gently into the shade of Koblenz mpd (below) on a sunny day in June 1970. Drifting gently to a stand at Cochem with a seemingly-endless train of coal hoppers (above) is DB three-cylinder Class 44 2-10-0 No 44 378. Bound for France via Trier and Thionville, the train halts here for a Class 50 banker to be attached for the slog up through the Cochemer Tunnel which, surprisingly, at 2½ miles, is the longest in Germany./F. R. Kerr; Robert Hunter; Brian Stephenson



Shrewsbury Remembered



Waiting for the right away from Shrewsbury to the south is a grimy Stanier Class 5 4-6-0 with a parcels train./R. I. Hoyle

D. B. Lewis

A recent brief visit to Shrewsbury brought back memories of a period of several months when I was working on the Western Region in that area over 20 years ago.

I left school in 1953 and, being an ardent Great Western enthusiast, decided to apply for a job on the Western Region. I started work in the Timetable Section of the Operating Superintendent's Office at Paddington, but I can't in all honesty say that I was overworked as, apart from the occasional delivery of documents and files to other Departments, virtually my sole duty was the upkeep of a record of the allocation of Working Timetables to Offices and Depots throughout the Region for use by the printers twice a year.

It was also my job to meet the 7.18 train from Trowbridge each morning, which arrived at Paddington at 10.07, to collect an ancient and well-worn wallet known as the "Reading bag". This was put on the train at Reading from the Signal Engineers Department and occasionally contained a few papers, but more often than not was empty. The Messenger's Section always returned the bag by an evening train and I can only imagine that some time-honoured demarcation of labour decreed that it should be collected in the mornings by a member of the clerical staff.

As can be gathered from its arrival time, the 7.18 was definitely an upper income bracket commuter train, serving stations on the Berks and Hants line beyond Reading and consisting mainly of first class accommodation. It was usually worked by a Westbury Modified Hall and I remember particularly that the regular performer, 6955 *Lydcott Hall* was always immaculately turned out.

My walks around the station gave me ample opportunity to keep an enthusiastic eye on train workings, and kindred spirits in other Departments could always be relied upon to keep you informed if anything unusual was expected, or had been seen. Of course, up-to-date information on locomotive movements and reallocation could always be obtained from the Engine Diagramming Section. A typical example was the test run on April 30, 1954 for the re-introduction of the 'Bristolian' on its pre-war schedule. I watched the train depart from my vantage point at the end of parcels platform 1A, and I remember 6015 *King Richard III* making an incredibly fast and sure-footed start, even for a King, helped by the downhill start and light loading. The train seemed to be doing at least 30mph by the time it passed me!

My errands about the station also frequently took me along the corridor which runs the entire length of platform No 1 at first floor level, and I was often able to pause to enjoy the fine view of the station from the oriel window half way along the platform.

After some two years of this somewhat meagre routine, albeit interesting for an enthusiast, I became understandably restless. I was eventually offered a place in a team which was doing research into freight traffic on the Western Region with a view to rationalisation of marshalling yards. The team consisted of about a dozen clerks, drawn from all over the WR, with an officer of Head of Section status in charge; we also received assistance from various Traffic Apprentices — some of whom were destined for rapid promotion and early fame.

We started work in Shrewsbury at the end of January 1956 when the West Midlands were in the grip of some of the coldest weather I have ever experienced — the temperature one night plunged to –4°F and only condescended to rise to the low 20s the next day! We were allocated a small office at the northern end of what was then platform 3, adjacent to Crewe Junction, and we travelled up each Monday morning, those of us from London catching the 09.10 from Paddington, and returned on Friday afternoons. Monday afternoon was spent in the office and on each Tuesday at 08.00 we started to cover the workings of the various yards in the area over a 72 hour period ending at 08.00 on Friday. For this purpose we were divided into teams of three working shifts from 08.00 to 16.00, 16.00 to 22.00 and 22.00 to 08.00. The night shift was longer in order to avoid changing over at the inconvenient and nowadays "unsocial" hour of midnight!

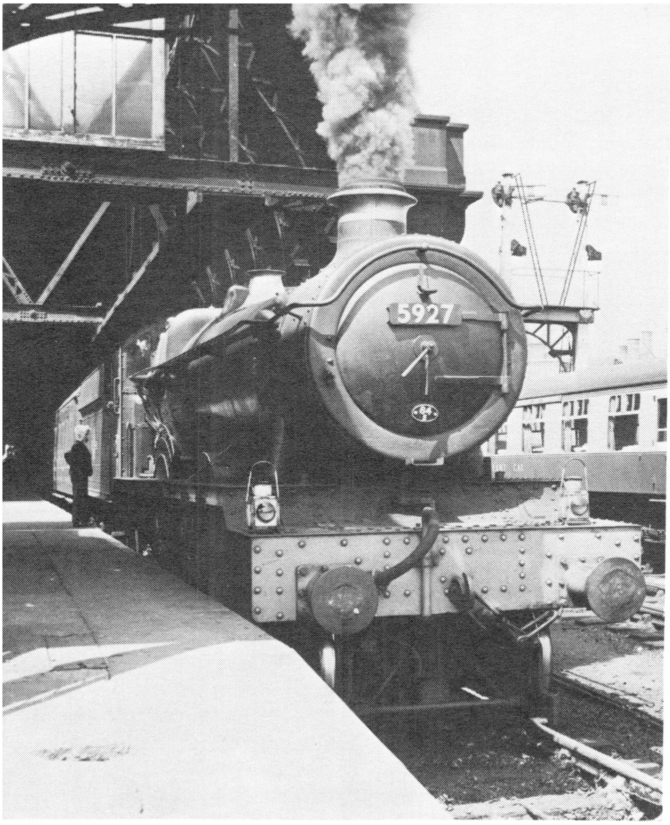
Shrewsbury, even more than now, was a vital junction and exchange point for both passengers and freight. On the freight side operating was particularly complex and cumbersome because there were no less than five yards and three smaller sidings coping with the traffic. These were Coton Hill Down Yard, situated north of the station on the Chester line and dealing mainly with through Western Region trains from the Paddington, Bristol, South Wales and Central Wales lines to Wrexham, Chester and Birkenhead which called to pick up local traffic from intermediate stations on the Hereford, Welshpool and Machynlleth lines, including the Minsterley Branch; Coton Hill Up Yard, situated opposite the Down Yard and dealing with similar traffic in the opposite direction; Coleham Yard, south of the station on the Hereford line between English Bridge Junction and Sutton Bridge Junction, where the Welshpool and Severn Valley lines diverged. This yard was a remarshalling point for traffic off the London Midland Region via Crewe and Stafford destined for Central and South Wales and other points on the Western Region; Abbey Foregate, south of the station on the Wellington line, and a starting point for trains to Stafford; and Harlescott Yard, on the Crewe line some 2 miles north of Shrewsbury and a starting point for trains to the London Midland Region.

In addition to these five yards there were the Shelf Sidings on the Hereford line close to Sutton Bridge Junction, the Shropshire Union Yard adjacent to the east side of the station, and Crewe Bank between Crewe Junction and Harlescott.

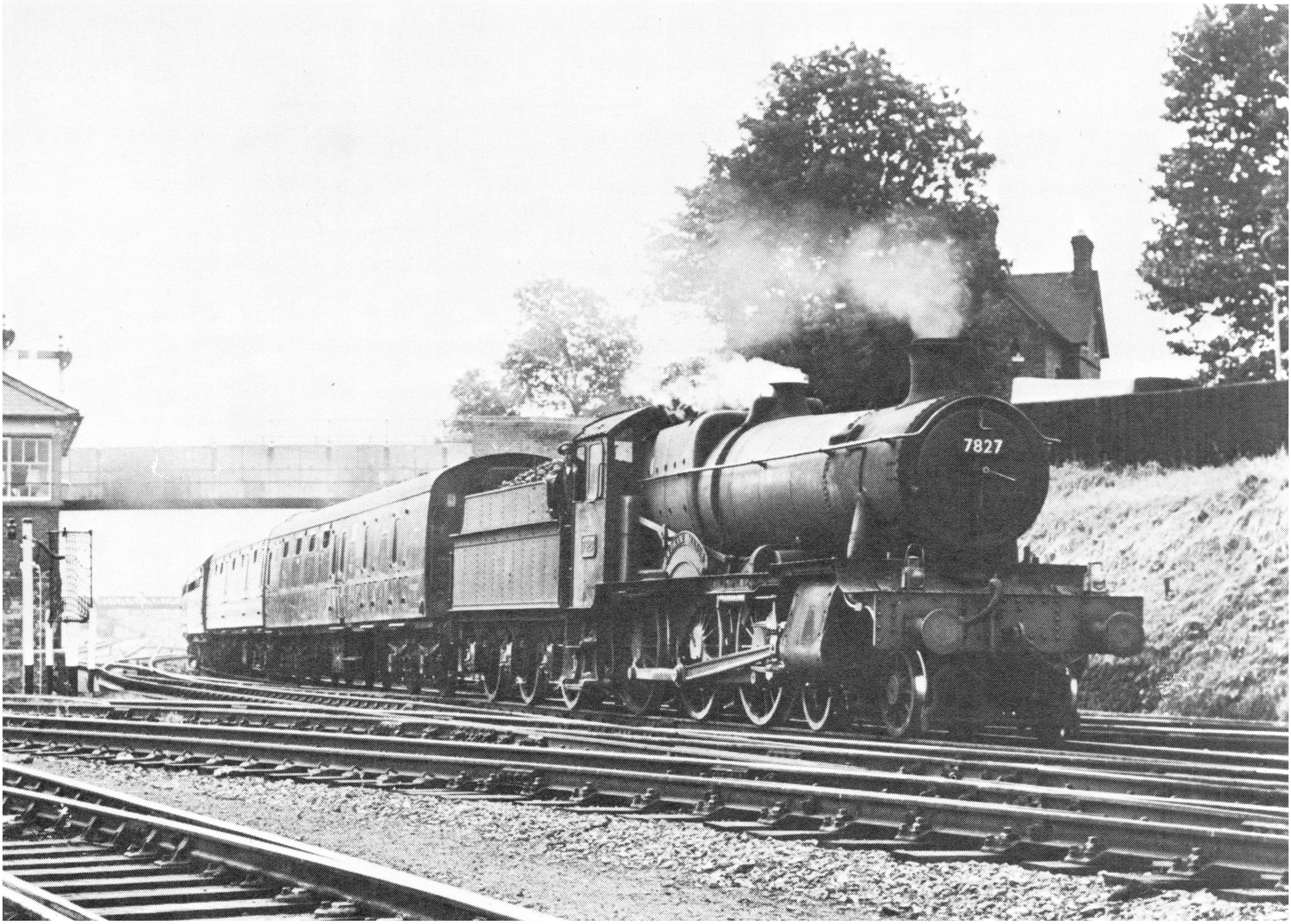
As can be imagined, much tripping and remarshalling of trains was necessary, due to the haphazard growth of these yards. Worse still, because none of the yards at Wolverhampton, Shrewsbury Wrexham or Chester which together served the northern area of the Western Region was capable of handling all the traffic for the area, it was necessary to stage wagons from yard to yard with consequent delays and additional marshalling costs. The same was true of inter-Regional traffic and although an attempt was made to by-pass the yards by marshalling complete inter-Regional trains, in practice the number was very limited.

Our task during the 72 hour period of observation was to log every incoming and outgoing wagon at the yard being examined, including through trains, noting the point of origin, destination and class of traffic. This may sound simple enough, and for the most part was, but in a busy yard, particularly at night in freezing conditions, some pretty smart work was required, illumination being provided at night by the then ubiquitous paraffin lamp wedged firmly under the arm!

My first week was spent at Coton Hill Down Yard on the evening turn, followed by a week of nights in the up yard, and over the next three months there were similar spells at Harlescott, Saltney (Chester), Crewe (Gresty Lane), Wrexham, Oxley and Abbey Foregate, punctuated by odd weeks in the office helping to collate the information gained by the team as a whole. In general we were received in a fairly friendly way by the staff, and there was only a minimum of suspicion on the part of some men — although had any of us

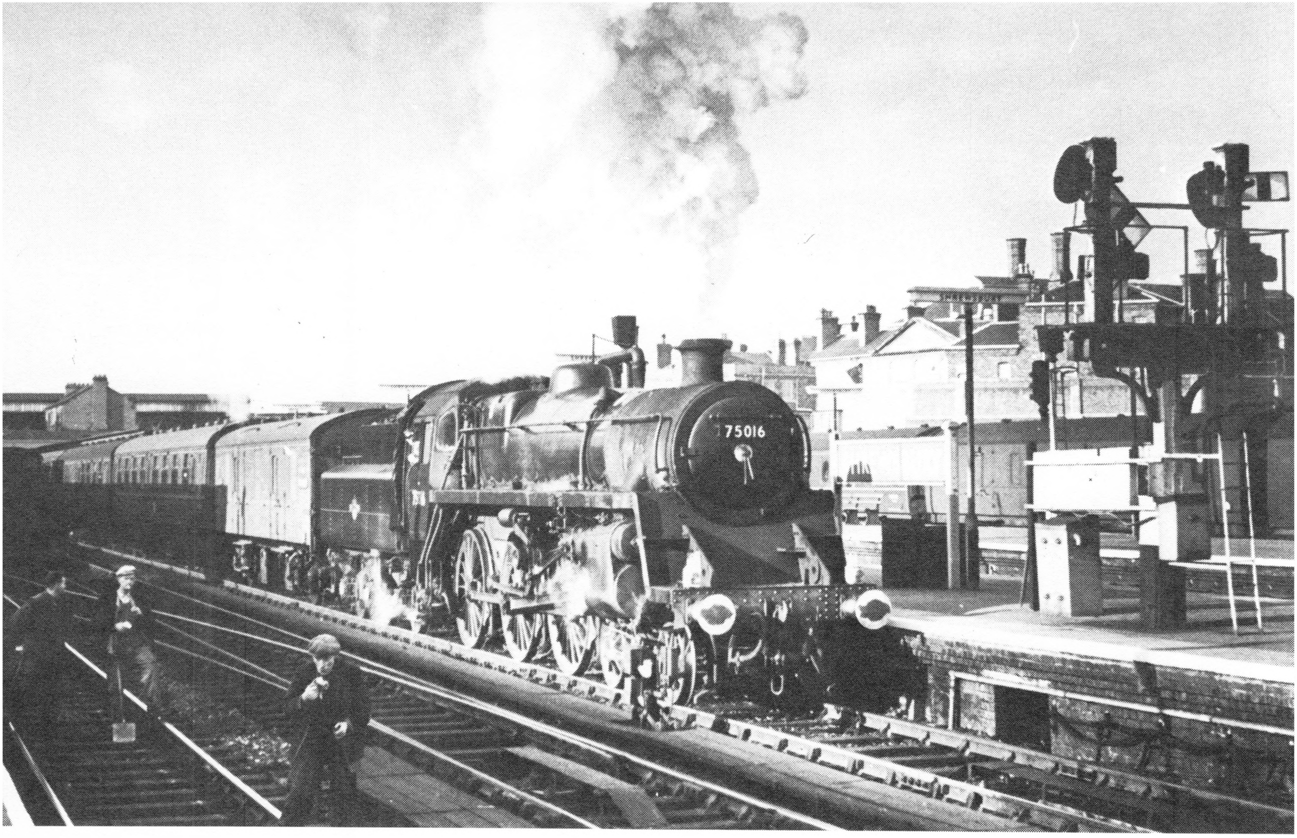


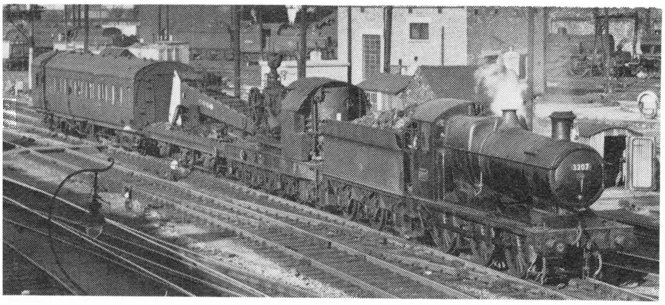
Located at the crossroads between the ex-GWR route from London to Central and North Wales, and the ex-LMS route from the North to South Wales, Shrewsbury has seen an enviable variety of motive power over the years. Ex-GW Hall Class 4-6-0 No 5927 Guild Hall *is ready to depart from Platform 7* (left) *with the 12.10 relief to Birmingham on May 16 1959, while a smaller sister in the form of Manor Class 4-6-0 No 7827* Lydham Manor *canters in off the Cambrian line* (below) *with a stopping train in August 1964. The ex-LMS route tended to attract the larger engines, and they could come no larger than Stanier's impressive Coronation Class Pacifics. They were not unusual at Shrewsbury, often appearing on running-in turns from Crewe, but 46250* City of Lichfield, *although in fine fettle, is working hard* (right) *as it sets off northwards with the Plymouth-Manchester through train on a summer's day in the late 1950s. Also bound for Manchester* (below right) *is BR Standard Class 7 Pacific No 70029* Shooting Star *in charge of the 11.50 from Swansea as it pauses on May 16 1959. In the shadows on the right, Stanier Class 5 4-6-0 No 44772 waits to depart with the 16.25 stopping train to Crewe.*
/S. D. Wainwright (2); E. N. Kneale; G. Wheeler



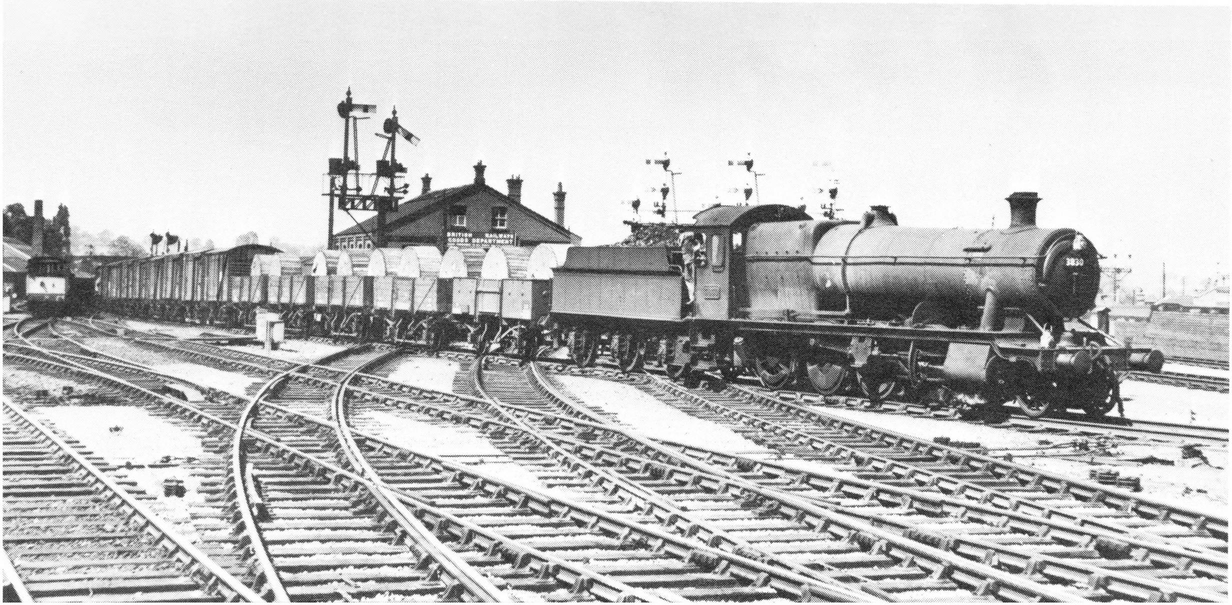
46250
CITY OF LICHFIELD
46250

936
SHOOTING STAR
70029
44772
VSBU





Like the other through services from Paddington to Central and North Wales, the 'Cambrian Coast Express' disappeared when the LNW lines to Birmingham and Wolverhampton were electrified in 1967, and services concentrated on Euston. BR Standard Class 4 4-6-0 No 75016 makes a spirited start from Shrewsbury (above) *with the down train on October 25, 1966, just a few months before the train's disappearance. Shewsbury motive power depot forms the background as Collett 2251 Class 0-6-0 No 3207 takes the Welshpool line at Sutton Bridge Junction* (left) *with the breakdown crane and staff van on September 24 1960. Off the Chester line and across the junction to the north of the station comes ex-GW 2800 Class 2-8-0 No 3830* (below) *with a lengthy southbound freight on June 12, 1964.*/R. E. B. Siviter; M. Mensing; Derek Cross



known that Dr. Beeching was lurking round the corner we all might have felt differently!

Even more than at Paddington, the job presented an ideal opportunity to study engine and train movements — especially as at that time a wide range of locomotives of both GW and LMS origin were to be seen, in addition to ex-WD and BR Standard types. The Coleham sheds had an allocation of about 40 ex-GW locomotives and about 55 ex-LMS, together with BR Standard Class 5 4-6-0s and WD 8F 2-8-0s. There were also a few diesel shunters for use in the various yards.

As far as passenger trains were concerned, on the ex-GW side the expresses were mainly handled by Castles and Counties, with the occasional Hall. The lighter Manors and Dukedogs were used on the Welshpool and Aberystwyth trains including, of course, the 'Cambrian Coast Express'. The North to West expresses off the ex-LNW Crewe line produced a more varied scene, with Scots, Patriots, Jubilees and Stanier Class 5s, whilst the Central Wales line passenger services were at that time the preserve of Fowler 2-6-4Ts from Swansea. Freight traffic offered the widest variety of all with most ex-GW and LMS types passing through, including the veteran ex-LNW 7F 0-8-0s and the ex-ROD 2-8-0s. Shrewsbury also boasted a number of ex-Midland Railway 2F and 3F 0-6-0s for local freight work, particularly on the Welshpool line.

The Severn Valley trains were worked by 51XX 2-6-2Ts and diesel railcar No 5 was to be seen from time to time. Crewe Works running-in turns could and did produce almost anything, either by way of light engines — usually coupled in pairs — or on the Shrewsbury-Crewe stopping trains, and rare engines from the furthest corners of the LMR made occasional appearances. Pacifics were regular visitors when running in, but on one occasion the arrival of No 72004 *Clan Macdonald* caused quite a stir as the class, then still quite new, were all allocated to the Scottish Region. Whilst on the subject of motive power, it should be mentioned that a Sentinel 0-4-0 shunter allocated to Shrewsbury was outstationed at the top of the Clee Hill incline, only coming down at infrequent intervals for servicing or attention.

One of the fringe benefits of the job was the possession of an all-stations pass for the Western Region which, whilst primarily intended for business travel, enabled me to travel quite extensively in my spare time. I remember my first experience of the Machynlleth line was on a wintry morning in February 1956, travelling on the 07.55 from Shrewsbury. When the train arrived at Moat Lane Junction, where it made a 6 minute stop, snow was falling steadily and the refreshment room, with its tea and buttered toast, was an extremely welcome haven! I managed to get around quite a lot, particularly when working the evening shift, and I always tried to travel back to London by various roundabout routes — including, on one occasion, a trip via Hereford and Bristol so as to come up to London on the 16.30 from Temple Meads, the up 'Bristolian'. I see from my notebook that Swindon was passed exactly one hour before the train came to a stand at Paddington four minutes early — not so fast as nowadays, but a typical example of the fine running of this train at that time.

One other experience comes particularly to mind concerning the week two of us were working the evening shift at Saltney Yard. On the evening in question we were late being relieved and had no hope of catching the last passenger train from Chester back to Shrewsbury, where we had digs. It was therefore arranged that we should travel in the brake van of a southbound freight train, a class C, two thirds fitted. Once we got clear of the Chester area, quite respectable speeds were achieved. The persistent chatter of rail joints under the four-wheeled van certainly accentuated the feeling of speed and, together with the at times violent side-to-side motion in the dim light of the stove, left an indelible impression on mind and body! The weather was cold, but the night clear and starlit, and we were rather disappointed not to be allowed to stand on the platform at the rear of the van to admire the view. However the guard was adamant that we should stay seated throughout the trip, and to be fair, he had good reason; it appeared that a colleague had been badly burned only the week before when he was thrown forward against the stove when the train unexpectedly braked rather heavily.

As if to emphasise his point, shortly afterwards our train braked hard and the rear, unfitted portion, including our van buffeted into the front fitted portion with considerable force.

When our work at Shrewsbury was complete, we moved to the West of England where further similar and equally interesting work was done at yards between Taunton and Plymouth. Probably as a result of our work, the British Transport Bill of 1960 included provision for the building of a new yard at Walcot, between Shrewsbury and Wellington, to replace most of the old yards and sidings, and to handle the through inter-regional trains. However, before work could commence, the entire scheme came under the Beeching axe and the plan was dropped.

What of Shrewsbury today? Sadly, this once-bustling provincial rail centre seems to have the permanent atmosphere of a winter Sunday; London can only be reached by changing at Wolverhampton. Except for the Crewe-Cardiff service, the through Saturdays-only North to West expresses and services between Euston, Birmingham and Aberystwyth during the summer months, diesel multiple units now reign

1M91

PLATFORM
7
North
Office
ooking
ut
CREWE
CR226
U9

*Picking its way through the layout at the south end of Shrewsbury station (*above left*) one day in 1966 is Warship Class 42 No D827* Kelly *with a train from South Wales for the London Midland Region. Also bound for Crewe is the Metro-Cammell twin unit (*below left*) waiting at Platform 7 to depart in August 1972. And it is off the London Midland Region at Liverpool and Manchester that this late-running express for Kingswear and Plymouth has come as ex-GW Castle Class 4-6-0 No 4098* Kidwelly Castle *sets off for the south across the junction with the avoiding line on April 15 1961./*C. Gwilliam; Colin Walker

supreme and there are only occasional flurries of activity when connecting trains arrive and depart. The overall roof at the Southern end of the station was removed some years ago and only the central island platform, with its two bays at the south end, are now used. The old platform 3 and its bays have been closed to passengers and the ticket office has been moved to the top of the stairs on the main platform. The bay platforms formerly used by the Severn Valley and Welshpool-line trains now accommodate departmental vehicles and at the time of my last visit several Vale of Rheidol coaches and a van were undergoing overhaul on the platforms.

Freight traffic seems much reduced and consists mainly of through block trains. Coton Hill Up Yard appears to be the only one now in regular use, as the Down Yard is full of condemned cattle wagons and Coleham Yard has recently been closed. Abbey Foregate is now used to stable empty coaching stock and parcels vans. Track has been lifted in the Shropshire Union Yard, and Harlescott and Crewe Bank have been reduced to passing loops only. The Shelf Sidings at Sutton Bridge Junction are still used for ballast wagons and other permanent way vehicles, but Coleham engine shed has been razed to the ground.

The pruning of facilities at Shrewsbury has not been entirely without its compensations, however, for the removal of the roof has opened up attractive new views of the Castle, Telford's Prison and the river. I was pleased to see that most of the semaphore signalling equipment remains intact, as does the fine signal box in the triangle of lines at the south end of the station.

Sadly, the office in which we worked has been replaced by a Post Office mail sorting complex, including an enclosed conveyor belt over the Chester lines!

A Cautionary Tale

Sydney Martin

It was an eerie sort of night, when ghosts seem to be around every corner, and as the oncoming signalman made his way along the deserted platform, he had to tread with care, for it was dark, foggy and freezing hard.

His feet crunched on the frozen gravel but the fog shrouded the noise of his footsteps and hung heavily around him. As always in dense fog, the world seemed muffled and all around was deadly quiet. Even as he approached the signal box, he could only dimly see the light from the windows.

Decisively, he strode up the steps leading to the warmth of the cabin, which was to be his lonely place of vigil for the next eight hours. But he could be fairly happy; down the line the fogsignalmen were on duty tonight, in much less congenial surroundings, their only consolation a blazing brazier, and the only noise the wild life in the hedges, punctuated perhaps by the explosion of a detonator as a train passed by. Fogsignalmen have to remain alert through many hours of intense, uncomfortable boredom, dodging the smoke of the fire and listening for the movement of the signals and placing detonators accordingly. On a foggy night, the 'fogman' is very much part of the signalman's team.

Back in the cabin, it was warm and dry, and as Bill, the oncoming signalman entered, he greeted his colleague with the words "It's a thick'un tonight, Jack!"

Jack agreed, and after allowing his mate time to settle, began to outline the traffic position, and explain the fogsignalling arrangements.

When all had been satisfactorily explained, Jack bade his colleague goodnight and left for home, both his form and his footsteps rapidly disappearing into the impenetrable gloom.

Silence closed in again, but not for long, for as time passed quickly to midnight, Bill had several trains past, with all the associated cacophony of bells and crashing of levers. Next, the fish, one of the fastest trains of the night, was due.

Delays were inevitable on such a terrible night, and Bill was not surprised to be told by his colleague in the next cabin ahead that the reason he could not yet give 'train out of section' for the previous overnight express was congestion on the line ahead.

Soon the block bell rang again and when Bill acknowledged the single 'call attention' signal, he found it was the fast fish which was being offered. With fogsignalmen at their stations, the rules said that he could accept the train, which he did. But he would have to halt it at his signals because of the express standing in the secton ahead.

In due course, the 'train entering section' bell signal was given, but apart from acknowledging it and moving his block instrument to 'train on line', Bill could do nothing until the fish train arrived at his outermost home signal, whereupon he could bring it within the protection of his signals.

Even though it was cold and foggy, the signal box window was slightly open, for Bill knew what responsibilities rested with his fogsignalmen in such circumstances. And he would be able to hear the approaching train explode the detonators as it passed his distant at caution, warning its driver that his signals were at danger.

Presently, he heard the muffled report of the exploding detonators and then the distant roar of the approaching fish train asserting itself through the fog. But the train did not seem to be easing up at all! To his horror, Bill could hear the powerful beats of the locomotive's exhaust as it rapidly approached, still under steam. With the express still, as far as he knew, in the section ahead, Bill had to act quickly; in a flash he was across the cabin, from his perch on a stool by the fire to the frame, swinging out the emergency detonators before grabbing a handlamp and making for the window in a desperate effort to show one more danger signal. But even as he did so the train roared past in a swirl of fog and steam, apparently out of control. Bill sent the 'train running away' signal to his mate in the next box ahead and then stood, staring at the frame, wondering with a sinking heart what else he could do. Would he hear the sickening crunch of the seemingly-inevitable collision, or would the fog shroud it? Why on earth didn't the driver hear the detonators, or see the signals? He tried to calm himself and stood looking into the roaring fire.

Suddenly he heard footsteps picking their way along the ballast, hesitantly making for the signal box steps. The box door opened and, in a swirl of fog, the figure of an enginman stumbled in, his face a deathly white.

Bill's brain was working overtime. What could it mean? Was he the survivor of the terrible disaster?

SCOUT GREEN

Growling steadily uphill towards Shap Summit past the lonely little signal box at Scout Green comes English Electric Class 40 No D315 at the head of the 10.40 Euston-Carlisle on a fine day in July 1963./M. Pope

"I'm lost — where am I lad?" asked the newcomer anxiously. "I'm off the fish — when we went over your detonators we realised we were lost and stopped as soon as we could."

Bill slumped on to his stool with a sigh of relief; the terrible disaster he had already imagined a dozen times over had been avoided. The 'phone rang. The signalman at the next box was anxiously enquiring about the runaway. "Not to worry" Bill assured him "It was just the 'fish' ran by my signals. Can you take it now?"

China for Steam

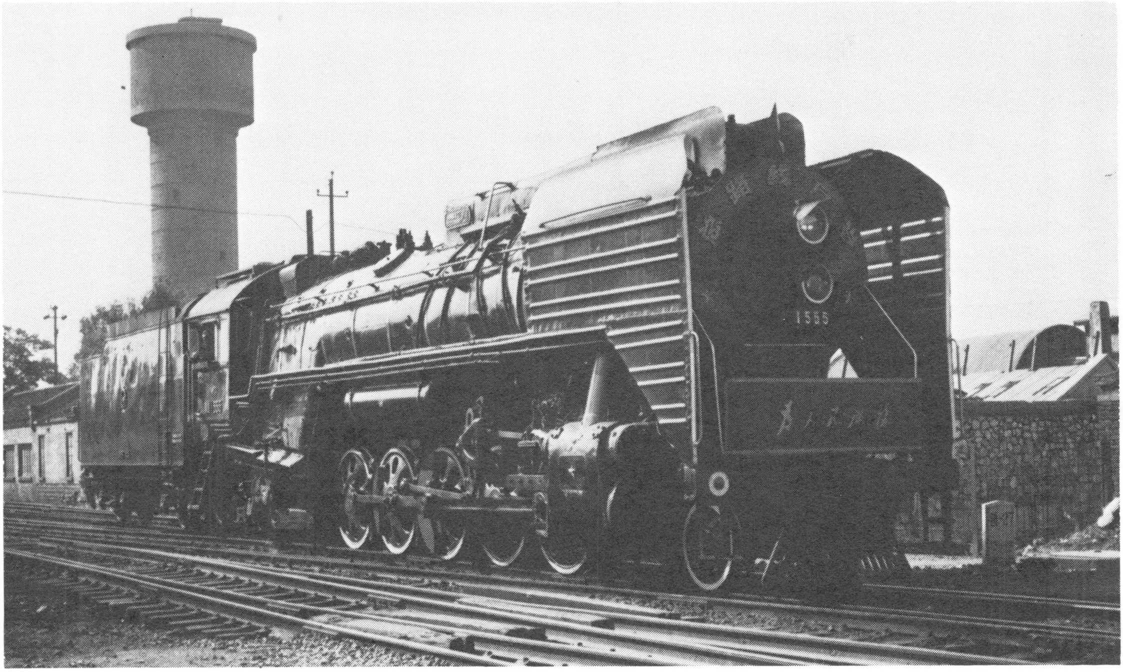
J. B. Hollingsworth

Although there must by now be few parts of the world which have not been traversed by enthusiasts in search of steam, the railways of China, like its politics, remain very much an enigma to Western eyes. So it was with particular interest that I joined a group of 22 railway enthusiasts who were embarking on the first-ever tour from Britain of the railways of China. Although we saw or heard no sign of the existence of the 4-12-4s we had heard about, we saw a row of brand-new 2-8-2s of the SY, or "Aiming High", class standing with rods off awaiting delivery in a siding near the station at Tangshan, which we visited just a short time before it was virtually destroyed in the earthquake of July 28 1976.

We reached the Chinese frontier by train from Hong Kong, and it was with some apprehension that we crossed on foot the covered railway bridge leading into the People's Republic. In the event, it was an apprehension that proved to be groundless, for the arrangements included armchair seats instead of queues, and a free and delicious lunch — an example that many more liberal countries might well follow while they subject their passengers to Customs formalities.

Furthermore, it very soon became apparent that the Chinese are no more sensitive to the photography of locomotives and trains than of handcarts, provided — in either case — no big bridge is involved (except, oddly, the biggest of all, the Yangtse River bridge at Nanking, which is apparently a showpiece) or anything military or under construction. Nevertheless, there was a problem. Parties visiting China are expected to regard themselves as privileged and to take their trip very seriously indeed. This means the study of Chinese society at first hand, and whilst perhaps not from the cradle to the grave, certainly from factory

*One of the magnificent Chinese Railways QJ Class 2-10-2s takes a breather at Tientsin (*below*) on July 13 1976, while the row of new SY Class 2-8-2s at Tangshan (*below right*) were photographed on July 14 1976, just two weeks before a major earthquake virtually destroyed the City./*David Scudamore



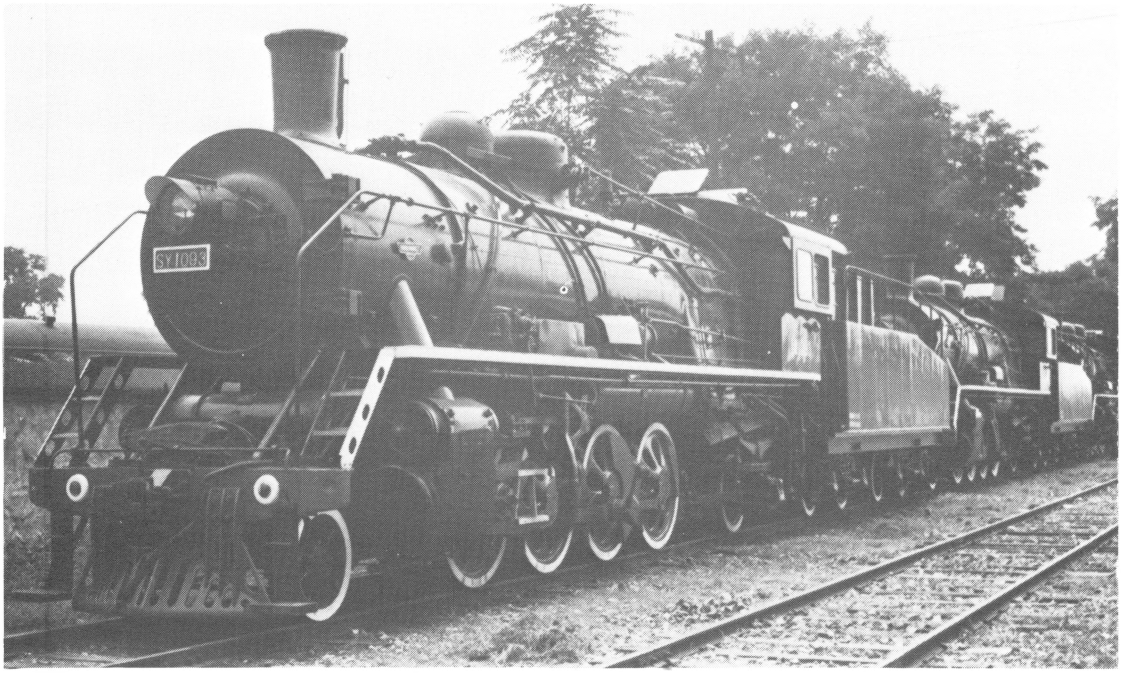
crèche to old persons home! In fact, only one-fifth of our planned visits involved railways. True, the 0530-0730 period each morning was usually available for do-it-yourself gricing expeditions, but difficulties nevertheless arose because unescorted and unannounced tourists cannot gain access to station platforms, whilst good photographic locations away from stations are hard to find in city environments.

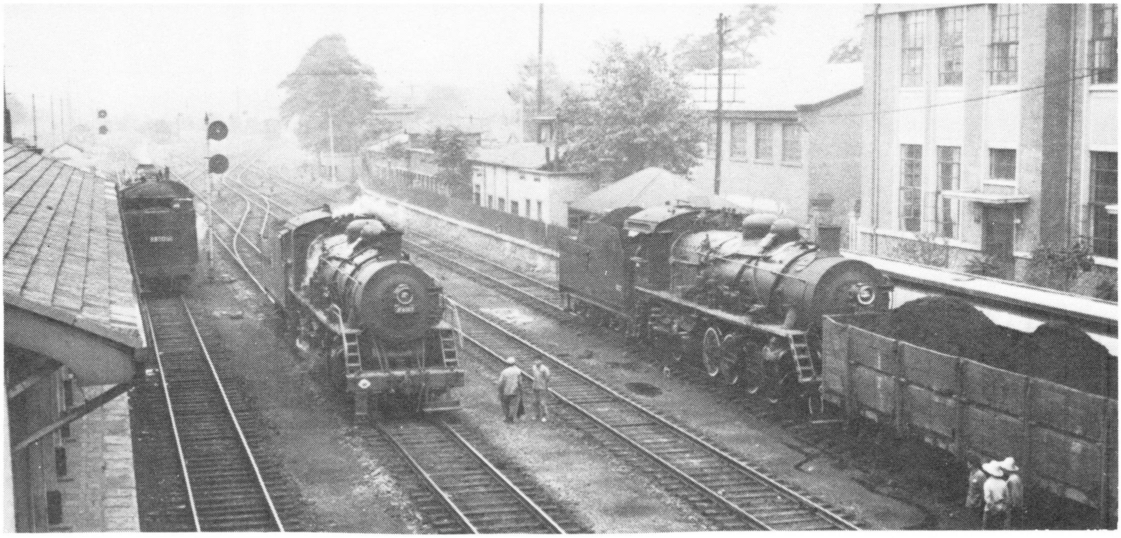
I am quite sure there was no deliberate attempt to ignore the party's expressed wish to see as much of the railways as possibe; I suspect it was more that the whole concept of amateur railway enthusiasm is totally incomprehensible to the Chinese — as indeed it is to many English people! Convinced therefore that a group which had only a very few actual railwaymen amongst its members could not possibly want an undiluted diet of railways, they gave us a programme with a modest railway content. We met nothing but the greatest courtesy and friendliness in homes, schools, farms and factories. The hotels were fine and the food simple but good in the Chinese tradition, and after a day or two the party took to chopsticks as to the manner born.

From the steam enthusiasts' point of view, all this might seem to add up to total disaster, but it was not so. For a start, the other parts of our programme were almost always fascinating and in any case, when we did get near the railways, steam was usually very thick on the ground. In fact, except on the route between Kwangchow (Canton) and British territory at Hong Kong, which on both sides of the border is now totally diesel, anything but a steam-hauled freight was a rarity. Furthermore, the group was rather fortunate in that two of its six rail journeys were steam-hauled, although the observed proportion of passenger trains so hauled was perhaps only half this.

It was almost exactly a week after take-off from Heathrow and four days after entering China that the party as a whole saw their first Chinese steam locomotive — during the course of an official tour of Peking Station, built, amazingly, in under 12 months during 1959-60 as part of the 'Great Leap Forward'. Our exceedingly pleasant but astute guides noted with astonishment and pleasure the instant change of mood among the group from their usual manner of interested approval to unabashed ecstasy as we dashed across to No 5 platform where RM "People" class 4-6-2 No 1250 had just arrived with an express.

Tall and handsome, this Pacific boasted 22½in by 26in cylinders, 5ft 10in wheels and 29,800lb. tractive effort. Built in China in 1964, although noticeably different to anything any of us had seen before, it contained much of its Russian and American progenitors. It must be remembered that steam locomotive construction began in China at just about the time it was ceasing elsewhere, so it could be said that No. 1250 was a nice example of average age. The class (which is a word one has to use with care in Red China!) is the standard steam passenger type in China and in some ways is what a BR Britannia might have





Busy scene at Tangshan on July 16 1976; Class JS 2-8-2 No 5096 waits alongside the platform for its next duty as station pilot, Class JF 2-8-2 No 4007 waits in the centre of the scene to drop back into the yard, while sister engine No 4008 busies itself with a rake of coal wagons to the right. /David Scudamore

looked like if, with similar axle-load limitations, the designers had had an extra 36in of height to play with. All too soon, with a blast on her air horn, she was whisked away from us and the station visit proceeded in a calmer atmosphere.

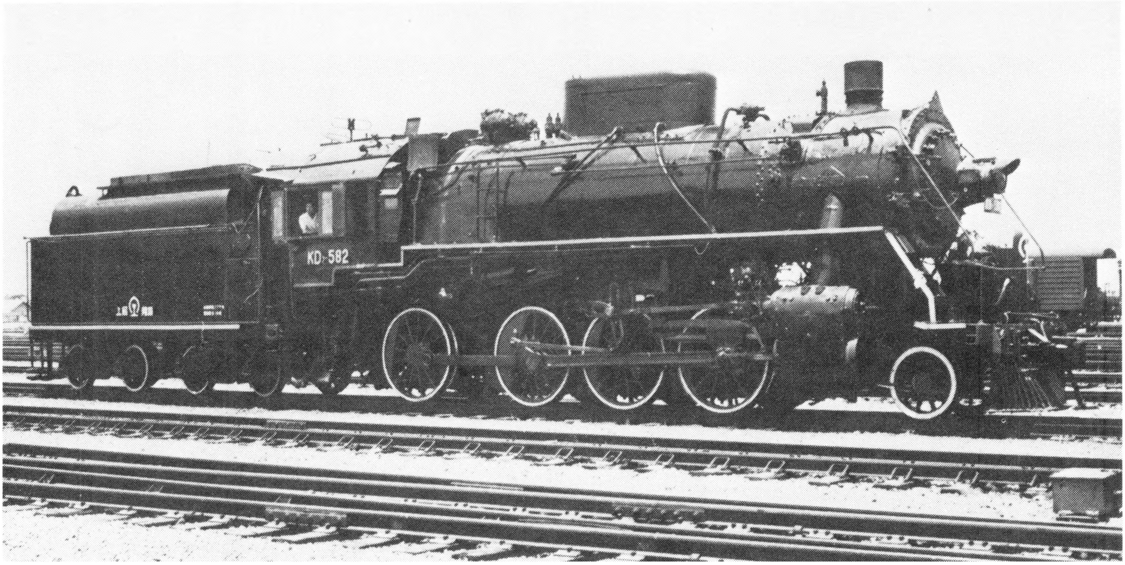
The following day, having dutifully done such 'musts' as the Great Wall, the Forbidden City and the Metro during our stay, we left Peking, paying a second visit to the station but this time as travellers rather than people bent on finding what made it tick. And whilst on the subject of ticking, incidentally, the clock on the great pagoda-roofed tower of Peking station chimes 'The East is Red' at noon and 6pm!

You can imagine our pleasure when, at a station where steam is only occasionally present, we saw a tender backing down on to our train, and moreover, when we discovered it was our friend 1250 again.

Out in the country, No 1250 used a steam chime whistle rather than the air horn and thus, ensconced in a soft-class sleeper in day use located as second vehicle of the train, the party could delight in exhaust and whistle music and get cinders in its hair. And, perhaps, reflect how long it was since they had travelled in a steam train not by special arrangement but just by chance. For some it was the first time ever!

Tangshan came all too soon, even with its display of new motive power, and the following day we were permitted to spend an hour or so on the station watching a parade of steam that no country, not even India or South Africa, could rival. One after another QL "Forward" class 2-10-2s kept rolling massive 2000-ton plus freight trains through on the main lines running, apparently, on the block all the time we were there. New JF "Construction" and older JS

Class KD 2-8-0 No 582, seen at Shanghai on July 21 1976, was one of the batch of American-built engines supplied to China under UNRAA auspices in 1946/7 and still performing yeoman service./David Scudamore



"Liberation" 2-8-2s were constantly on the move over the freight lines, while on the other side of the line was the row of brand new 2-8-2s mentioned above. The whole added up to a feast of steam very much along the lines of what one imagines pre-war US railroading to have been. Or perhaps, on reflection, Canadian, for while the array of old and new box cars, gondolas and flats was completely North American, the uniformity of ownership was something only found in Commonwealth territory. If the sound of those 'sure authennic' chime whistles was anything to go by, this action continued day and night without pause for, make no mistake, China's railways are fully utilised.

The QLs, the current version of which has been constructed in China steadily since 1964, are big locomotives with 25½in by 31½in cylinders, 59in wheels and 73,400lb tractive effort for a weight of 149tons including tender. Older versions date back to 1956. A feature, common with the RM 4-6-2s and JS 2-8-2s, is an external steam pipe, contained in a massive casing, running forward from the dome to a regulator box on the smokebox behind the chimney; this arrangement was typical of post-war Russian designs, from which the Chinese built up their locomotive industry.

While in Tangshan, we visited a farming commune, and the journey there lay along a valley served by a brand new branch line. The trains we saw were hauled by equally new SYs, offering the amazing combination of newly-built steam engines running on a newly-laid branch line! On the third day, we left Tangshan, again by steam and this time we sampled lunch in the restaurant car. Chopsticks by now held no terrors for the party and this enabled us to enjoy a particularly nice meal in the Chinese style, simple but excellent.

We travelled as far as Tientsin, where we paused for two days stay, and during this time the only item of railway interest, the Civil Engineering Institute, did not involve trains or locomotives. The speed with which Chinese Railways are expanding (13000 miles in 1950, 24000 in 1970) is emphasised by the fact that some 140 Railway Civil Engineers graduate each year. Some amazing new railway projects, driven through the mountains in the west and south, have recently been completed and more are in prospect.

We left Tientsin in the evening for the 800-mile journey south to the ancient city of Soochow, giving 20 uninterrupted hours of undiluted railway enjoyment. As it turned out, the reality was even better than the prospect; whilst our own train was diesel-hauled, 95 per cent of the locomotives we saw were steam. For a long time the types seen did not change, although their livery and embellishments showed great variety — not, I imagine, at the whim of individual drivers, for that would be against the philosophy of the regime, but possibly the work of local revolutionary committees at each shed. Then all at once there was a click and things changed — we entered the land of the Flying Donkey!

The parade of QJ 2-10-2s we had been passing as we journeyed South suddenly gave way, as we neared the Nanking area, to a rather different design classified (as always, in Roman characters) FD, but apparently without any patriotic classname. These fine 2-10-2s had spoked rather than box-pok wheels, 12-wheel tenders instead of the usual eight and no external main steam pipe. In the absence of any official name, the group promptly christened them 'Flying Donkeys', but it subsequently transpired that they were ex-Russian FD Class engines. In full they are the 'Felix Dzherzhinsky' class, named, it is thought, after an early Bolshevik prominent in the secret police. Of 3200 built between 1931 and 1941, 2000 are reputed to have been sent to China during the 1950s involving conversion from 5ft 0in to 4ft 8½in gauge. The subsequent breach between China and Russia led to recriminations over the price — which we were told was 10 per cent higher than the cost of building them new at home. After this, the originally-chosen 'Friendship' classification seemed inappropriate, and they remain unnamed.

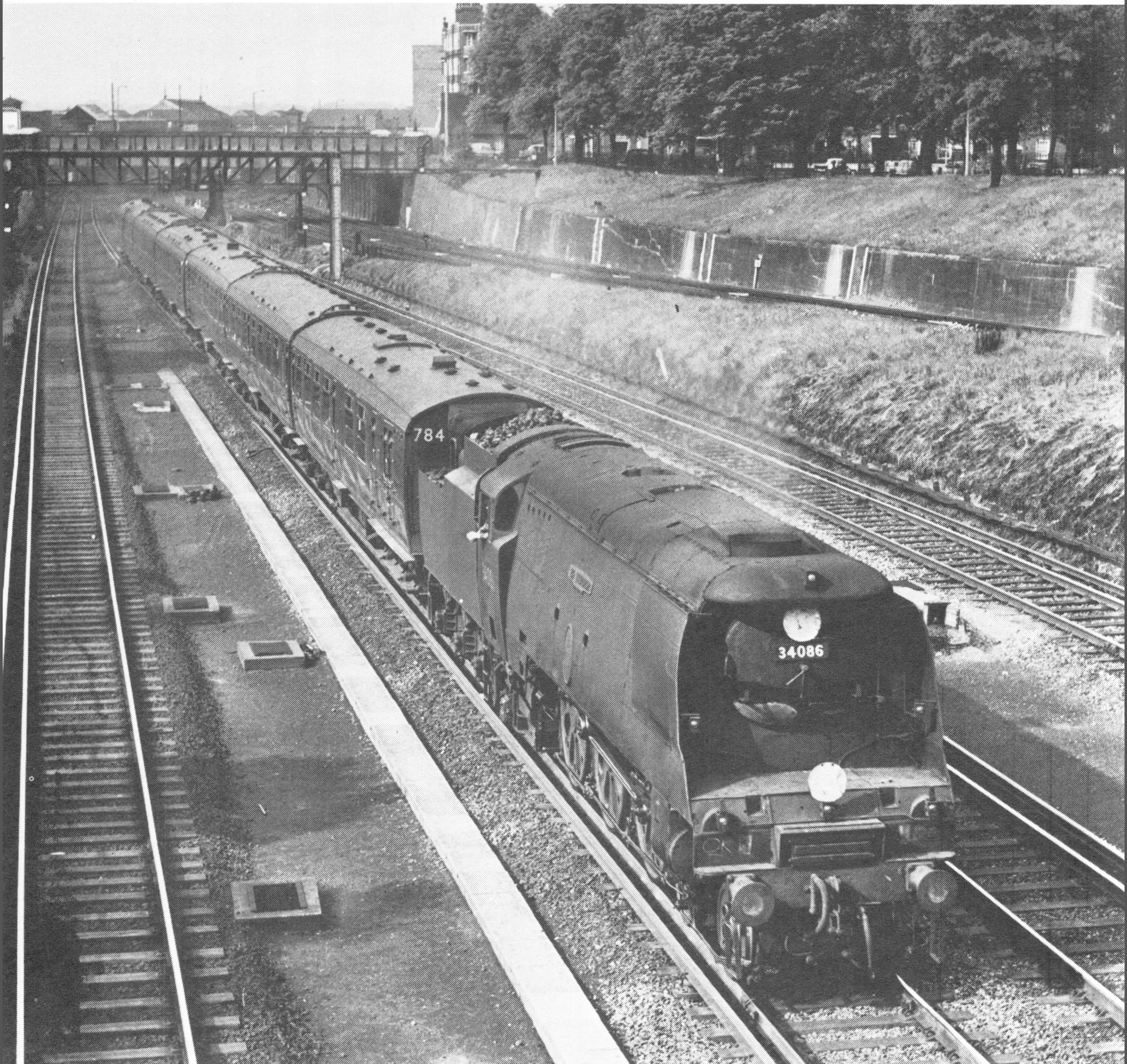
The crossing of the Yangtse River at Nanking marked the last stage of the journey and soon enough we reached Soochow, where the still extant and operative canal transportation system reminded us, just as it did Marco Polo, of Venice. Nothing of Railway interest was shown to us here and, in fact, only one railway visit remained, although it turned out to be the best of all — a morning at the mechanised marshalling yard serving Shanghai., Although the equipment there was both modern and sophisticated, all movement, including humping, was steam-powered, with yet another class, the US-built KD 2-8-0s, supplied under UNRAA auspices in 1946-47, predominating. Like the FDs, the KDs are regarded as 'imperialist' and therefore unworthy of naming!

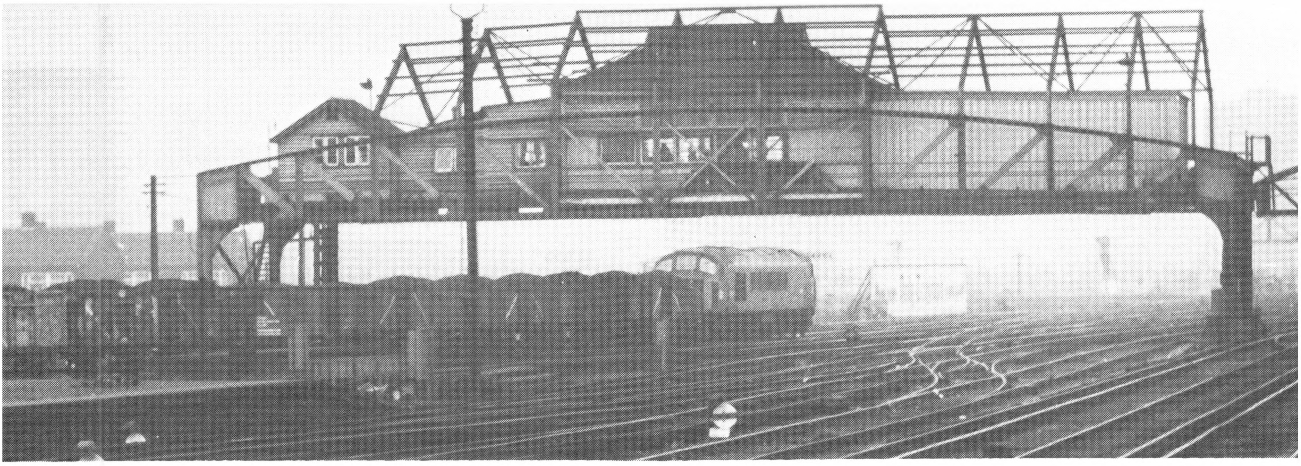
Apart from some KDs seen a day or so later in Kwangchow (Canton) — to which we flew by British-built Trident — this marshalling yard visit concluded our steam sightings. An ounce of regret remained that we had neither seen nor heard of the Vulcan Foundry-built KF Class 4-8-4s of 1937, seen running as recently as 1966, nor any of the 26 ex-GWR Dean Goods supplied through UNRAA after World War II. They may, of course, all have been scrapped, but it is tantalising not to know.

We left China the way we had come, crossing on foot the railway bridge at Low-wu on the Canton-Kowloon railway, with the Red Flag flying at one end and the Union Jack at the other, noting as we did so the last six-bolt Chinese fishplate and the first British four-bolt one.

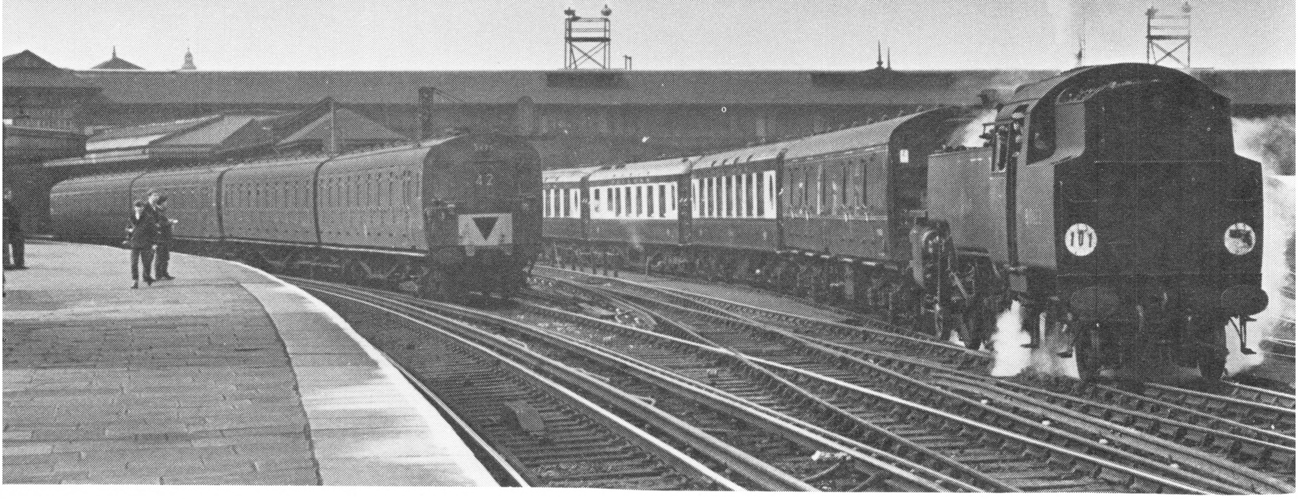
Up the Junction

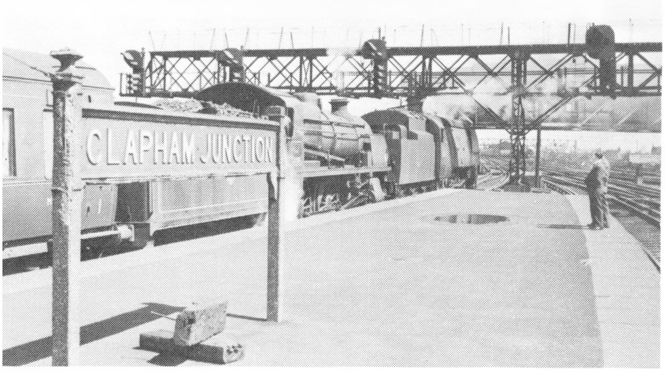
Clapham Junction is said to be the busiest junction in the world. But in reality, although it is an important suburban interchange, in railway terms it is not so much a junction as a meeting of 12 parellel running lines — four Brighton lines, four South Western main lines and four Windsor lines. Pulling smartly away from the 40mph restriction on the main through lines (below) *is Bulleid Battle of Britain Class Pacific No 34086* 219 Squadron *with the 17.00 Waterloo-Yeovil Town train on May 23, 1964. Although during rush hours passenger traffic monopolises the running lines, a considerable amount of freight passes through Clapham Junction in off-peak periods, usually travelling via the West London line to Kensington, Willesden, Cricklewood or Stratford. Heading for such a destination is the unidentified Class 45* (top right) *moving a heavy coal train off the Windsor lines on to the spur to the West London line on a misty day in December 1970. For many years the only passenger trains over the West London line have been the two workings to Kensington Olympia on weekday mornings and evenings for workers at the giant National Savings Bank. These trains were among the last to be worked by steam on the Southern, and with little more than a week to go before diesels took over, BR Standard Class 4 2-6-4T No 80085 prepares to take the empty stock for the afternoon train out of the Brighton side West London line platforms* (bottom right) *back to Olympia on June 28 1967. Between the ex-LSWR main and Windsor lines there are extensive carriage sidings serving Waterloo, and it is from this terminus that Urie ex-LSWR Class H16 4-6-2T No 30518 has brought a train of empty stock for servicing* (centre right) *as it negotiates the crossovers beneath Clapham 'A' box on April 20 1952.* /Brian Stephenson; M. Dunnett; G. D. King; P. H. Wells





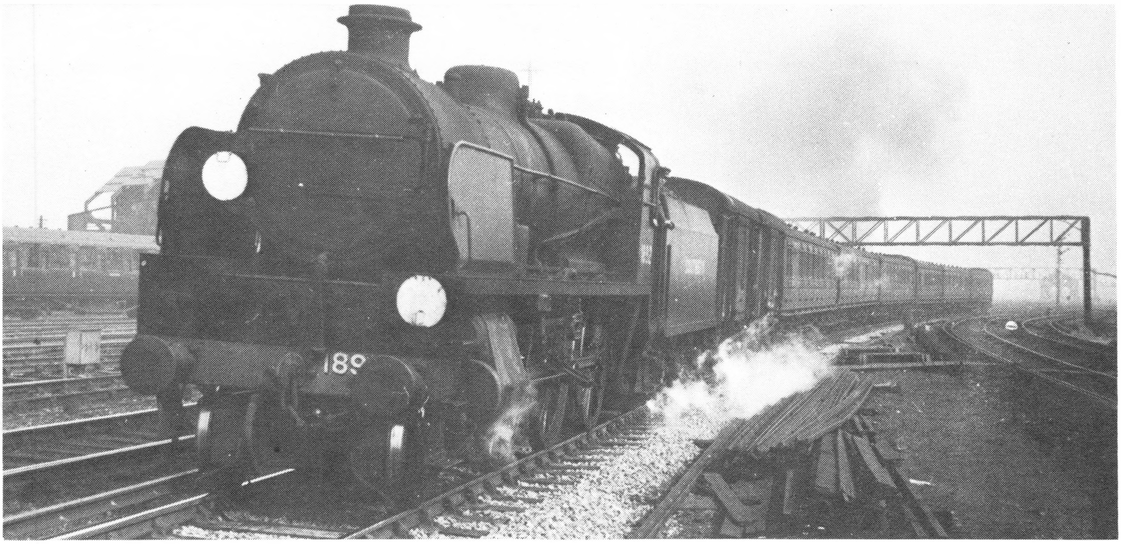
80085



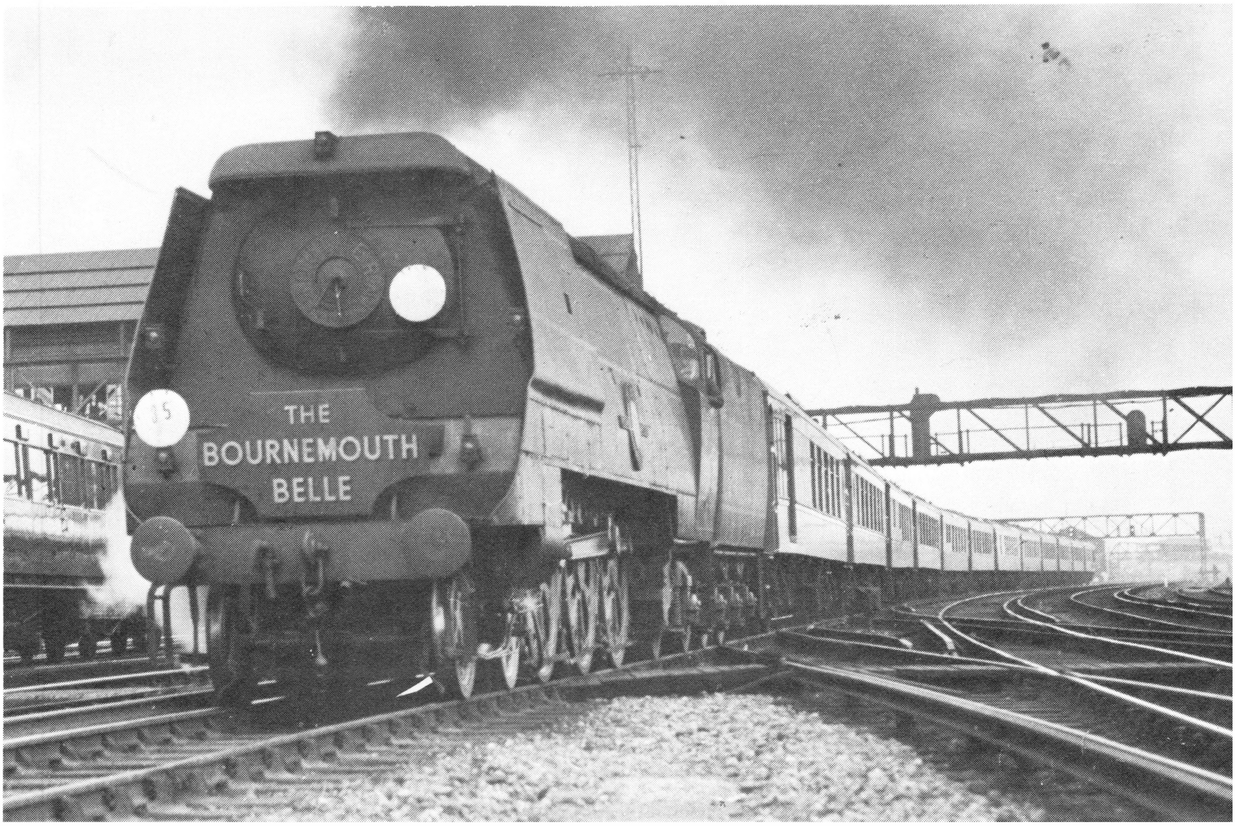


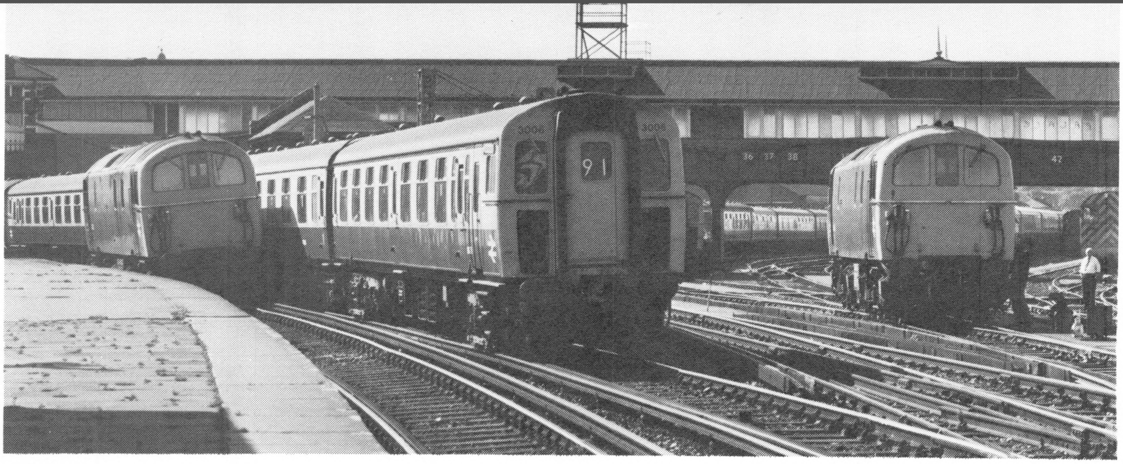
SR 2EPB unit No 5675 leads another of the same type along the up main through line with an up mid-morning Guildford new line train (above left) as BR Standard Class 4 2-6-4T No 80133 sets out for Waterloo with the empty stock for the down 'Bournemouth Belle' on April 8 1967. Also at the head of empty stock (left) are Class U1 2-6-0 No 31895 and Bulleid 'Battle of Britain' Pacific No 34086 219 Squadron as they wait for the road in the Windsor line platforms with an 18-coach special bound for Lewes via Tulse Hill on August 12 1960. With a somewhat lighter load, ex-GW 5700 Class 0-6-0PT No 4672, one of a number transferred to Nine Elms from the Western Region for empty stock work in the late 1950s, trundles the empty stock of a Salisbury local back from Waterloo into the carriage sidings (right) on October 14 1959. The South Western lines were by no means the only haunt of steam; despite extensive electrification of the Brighton group of lines in the 1930s, all Oxted line trains remained steam-worked, and it is at the head of a Victoria-Tunbridge Wells via Oxted train that

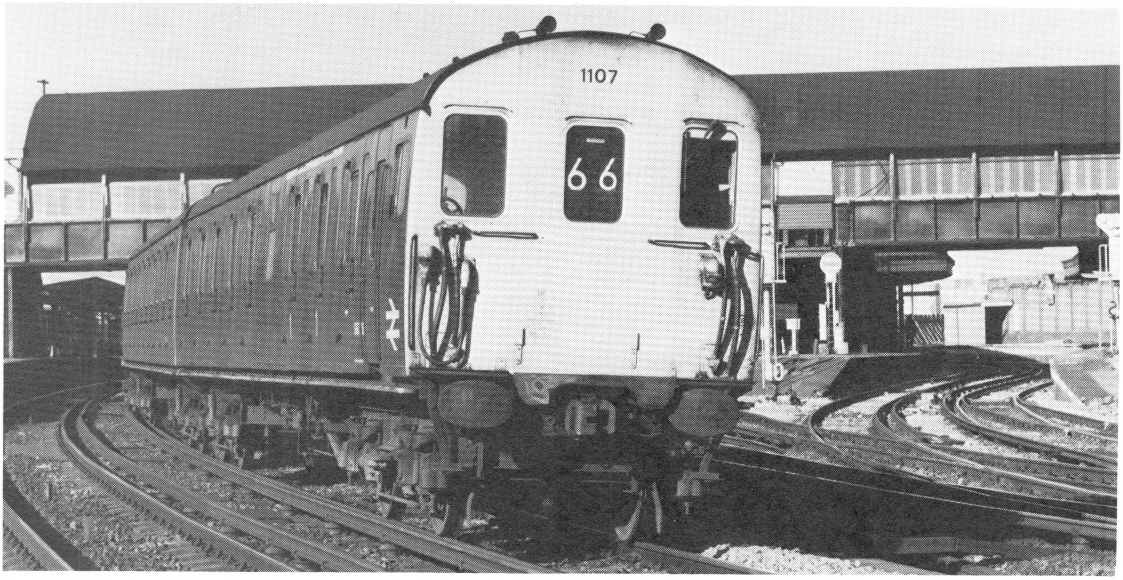
3051
4
BRIGHTON BELLE

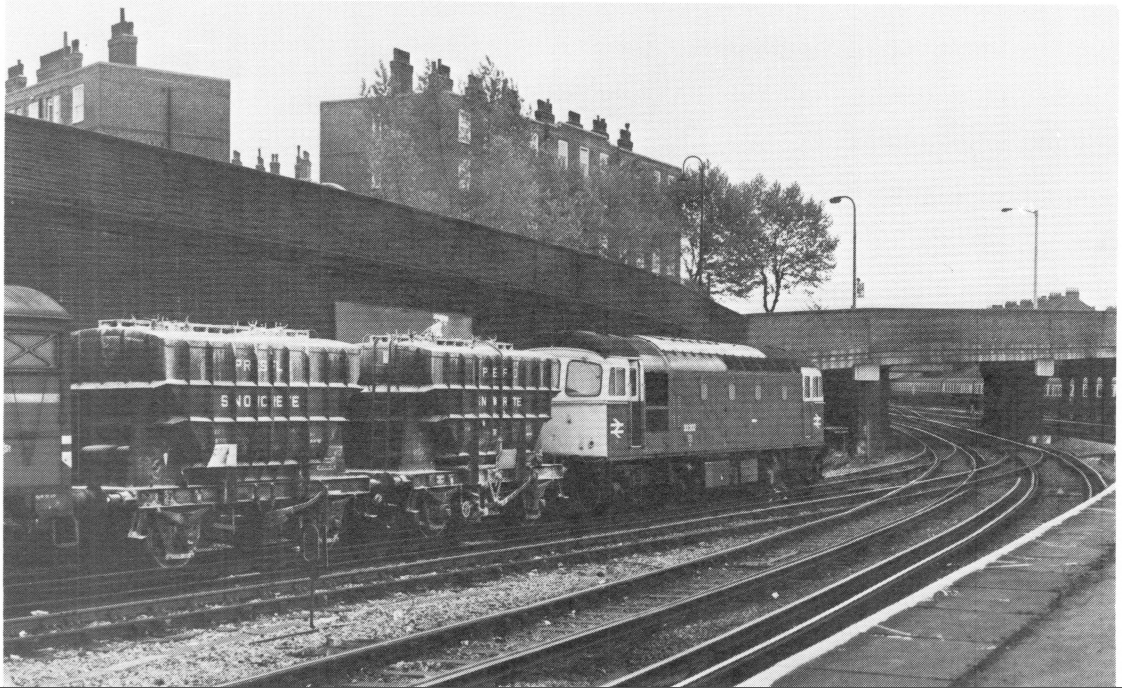


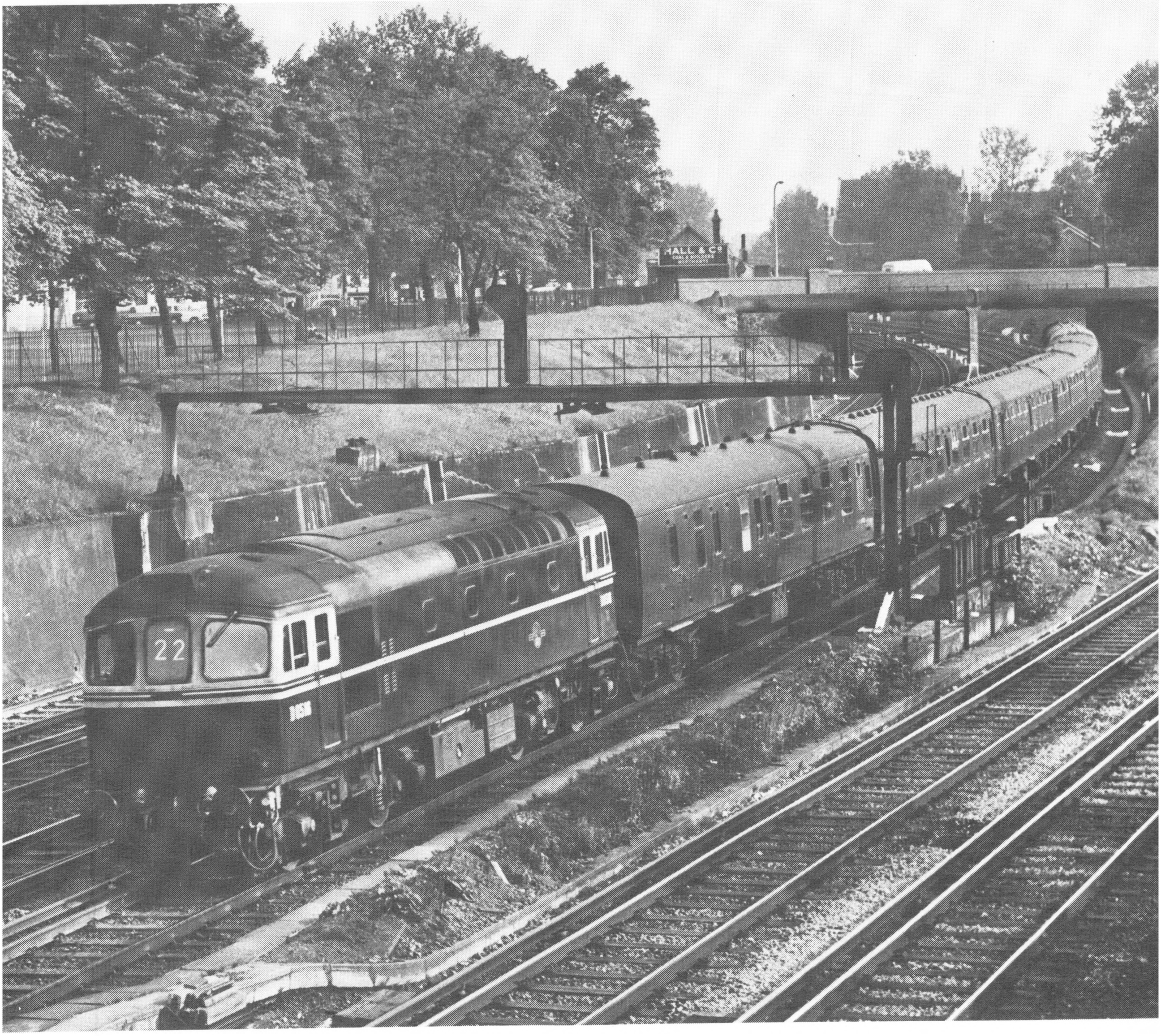
three-cylinder Class U1 mogul No 1892 approaches Clapham Junction (above right) on the down Brighton through line in Autumn 1947. In addition to the individual Pullmans in the Brighton line expresses, two all-Pullman trains daily passed through Clapham Junction, although neither (usually!) stopped. Wearing its new British Rail-style Pullman livery, and now sporting a roller blind headcode panel, 5BEL unit No 3051 hurries away from Clapham (below left) towards Wandsworth Common on one of its thrice-daily dashes to Brighton as the 'Brighton Belle' on July 2 1970, while over two decades earlier, Bulleid Merchant Navy Pacific No 35022 Holland-America Line *brakes for the speed restriction as it hurries the 12-coach all-Pullman down 'Bournemouth Belle' through Clapham on June 18 1949. The 'Bournemouth Belle' was withdrawn when services to Bournemouth were electrified in July 1967, while the 'Brighton Belle' survived until spring 1972, when it was replaced by ordinary service trains.* /John Bird; J. Scrace (2); C. R. L. Coles; J. H. Cooper-Smith; C. C. B. Herbert



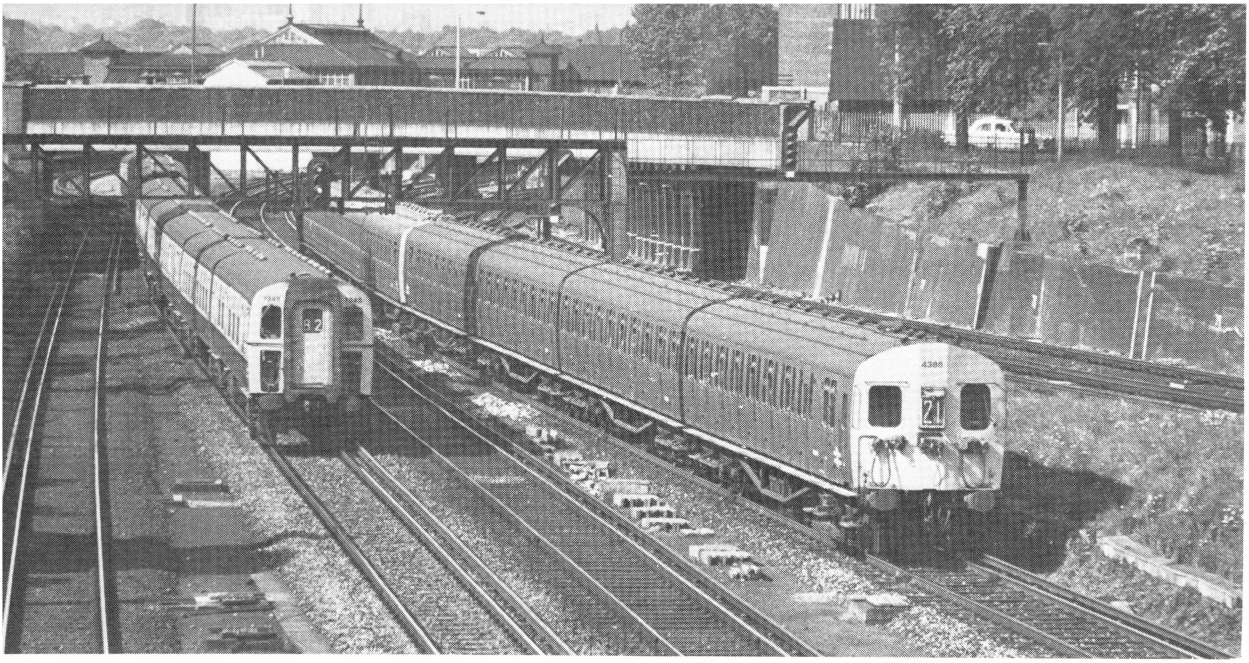

91


1107
66



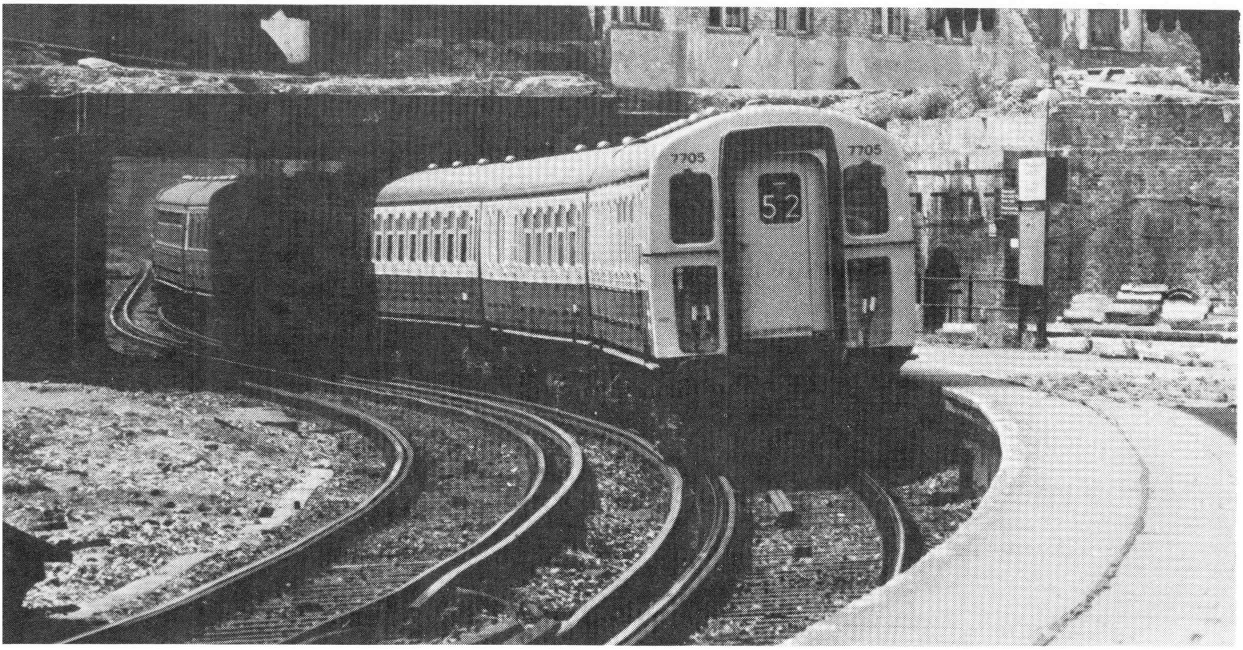


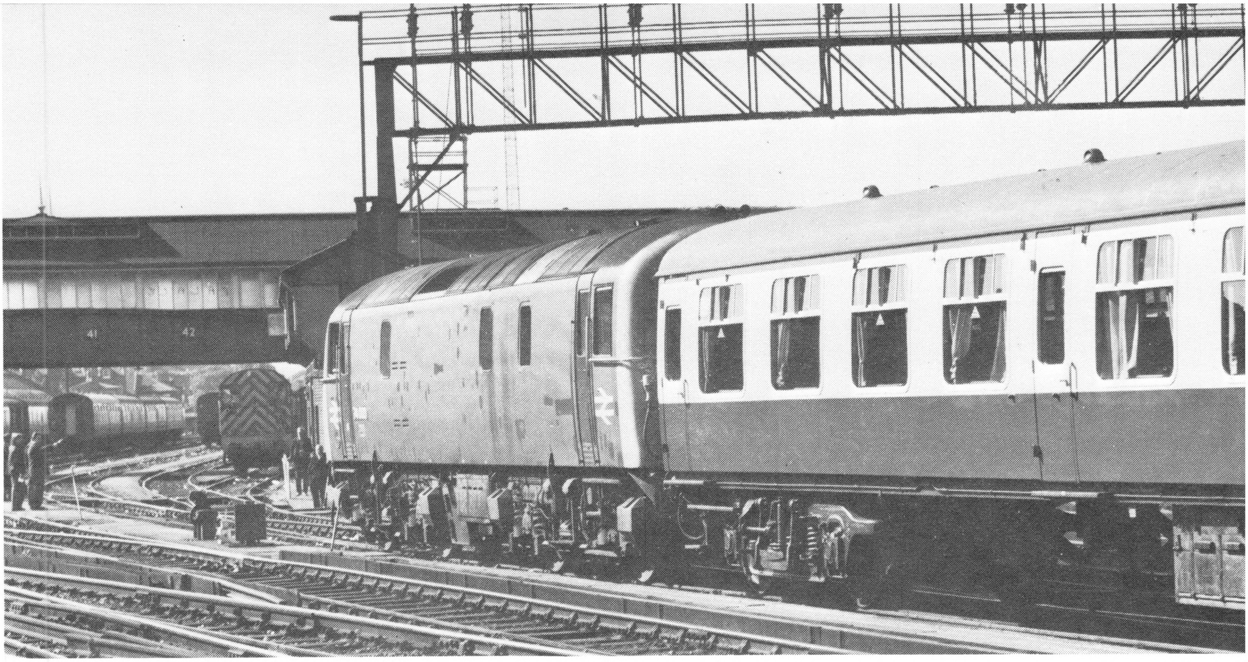
For its Bournemouth line electrification in 1967 the Southern Region continued the Southern Railway Practice of rebuilding existing stock; although the motor coaches of the 4REP tractor units were new, all the remainder of the stock was converted from existing locomotive-hauled vehicles, while the Class 74 electro diesels were modified Class 71 electric locomotives originally built for the Kent Coast schemes. This September 18 1974 view (top left) *of Clapham finds 4REP 3006 leading an up Weymouth/Bournemouth-Waterloo express along the up through, between Class 74 electro-diesel No 74003 running light on the down through and sister locomotive No 74 004 standing in the yard throat. Rendered redundant in their native Hampshire by electrification and line closures, many of the 3H three-car diesel-electric units have found work on the Oxted line, where they in turn displaced locomotive-hauled trains, although they are unable to work beyond Tunbridge Wells West because they are wider than the 3D Oxted line units proper; unit 1107 restarts from Clapham Junction* (centre left) *on the 16.49 Victoria-East Grinstead on September 18 1974. Returning from a day at the races on the Oxted line* (above) *is Class 33 No D6516 with the 17.05 Lingfield-Victoria race special on May 23, 1964, while on more prosaic duty eleven years later is sister Class 33 No 33202* (bottom left)*, one of the slightly narrower batch built to the Hastings line loading gauge, heading a Stratford-Norwood Junction freight out of the now-electrified West London line platforms and on to the down Brighton local on June 4 1975.*/Brian Morrison (3); Brian Stephenson

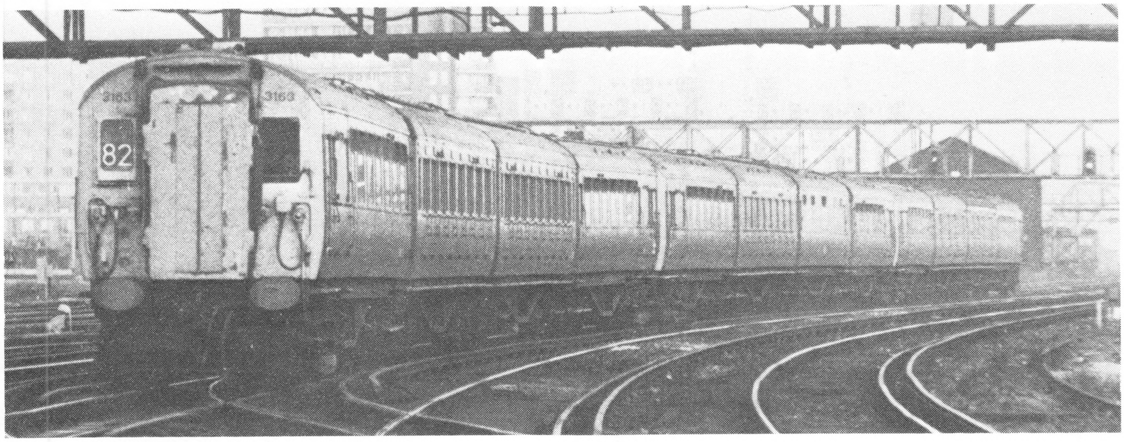


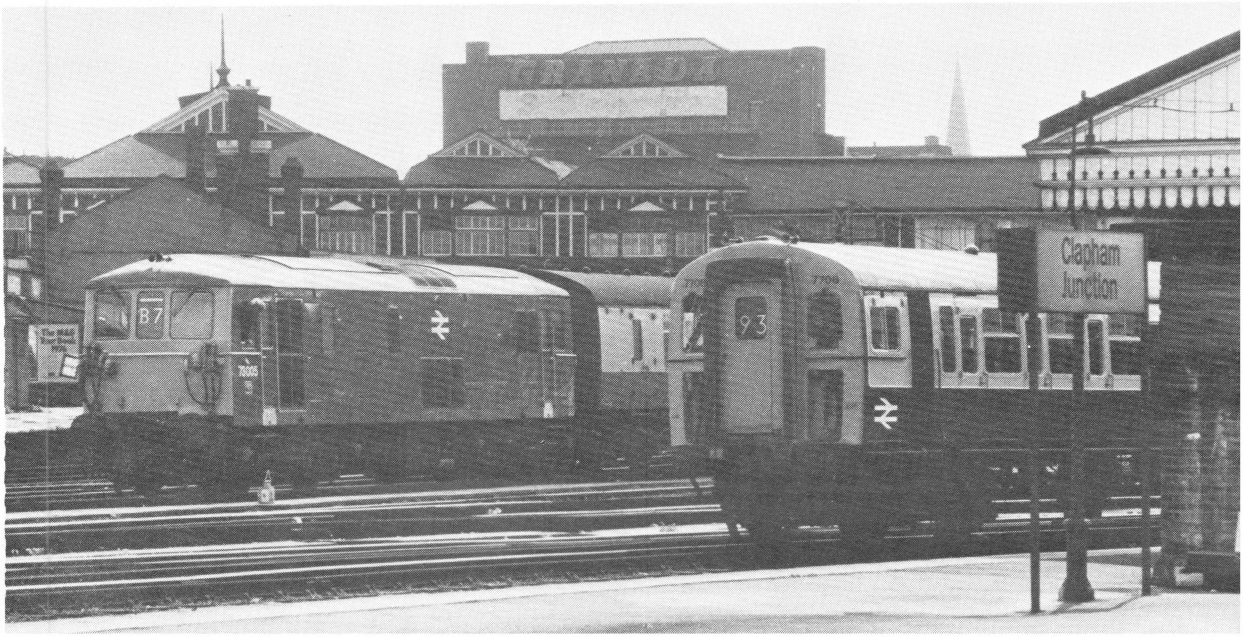
As it accelerates away from the reverse curves on the main through lines at Clapham, 4CIG No 7345 at the head of a 12-car Waterloo-Portsmouth semi-fast overhauls 4SUB No 4386 (above) as it restarts from the local line platforms on a Kingston roundabout working. The severity of the reverse curves — and the somewhat unkempt appearance of this, the world's busiest junction — is emphasised (below) as newly-repainted 4VEP No 7705 leans to the curve at the head of an up semi-fast from the Alton line. Also looking a little tatty is patched-up Class 74 electro-diesel No 74003 (top right) as it treads carefully through the yard with the empty stock of an incoming boat train on September 18 1974. Shunting Clapham yard on May 13 1976 (bottom right) is one of the six prototype baby electro-diesels, now Class 73/0 No 73005 while 4VEP No 7708 waits for a path to Waterloo to work a down Bournemouth slow service. Now sadly replaced by CIGs and BIGs, both the Brighton and Portsmouth express units were at one time familiar sights at Clapham; in the last months before displacement to more mundane work by the arrival of new 4CIG units, 4COR No 3163 leads a 12 car formation (centre right) as it hurries up to the Junction on a down Waterloo-Portsmouth Harbour semi-fast in 1970.

/Brian Stephenson; Michael Baker (2); Brian Morrison; Kevin Lane

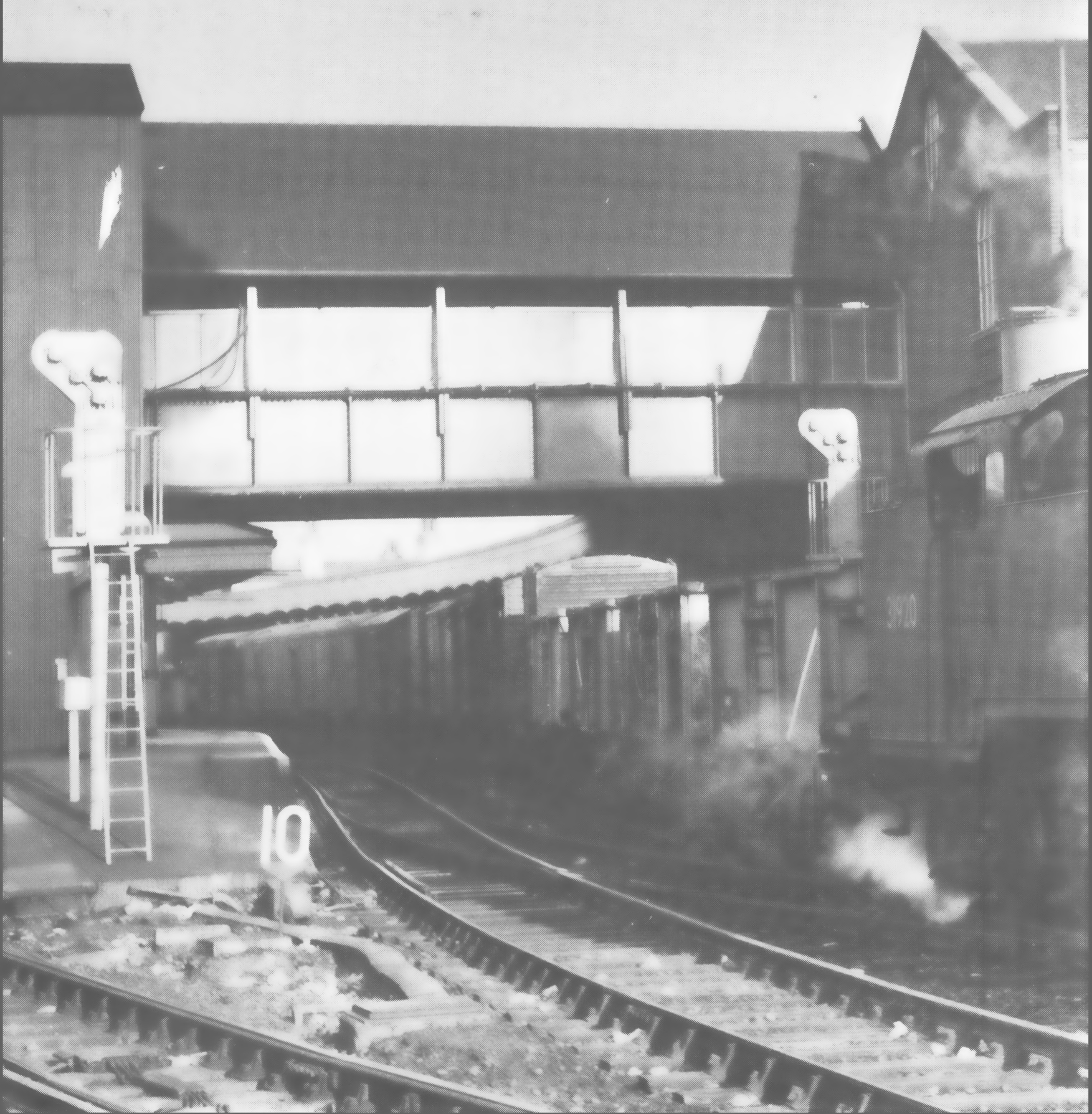



41
42


3163
3163
82


GRANADA
B7
93
Clapham
Junction

Back cover: *Class 4F 0-6-0 No 44422 and BR Standard Class 4 4-6-0 No 75072 head the 10.05 (SO) Bournemouth-Cleethorpes near Shepton Mallet on the Somerset & Dorset line.*/Ivo Peters



This page: *Essentially a tank engine version of the Maunsell three cylinder N1 moguls, the 15 W Class 2-6-4Ts spent almost their entire lives working freight trains in the London area. In charge of a heavy Willesden Junction-Norwood Yard transfer freight is No 31920 as it blasts off the West London line and on to the Brighton local on November 7 1962.*
/Brian Stephenson

ISBN 0 7110 0813 2
Code: AXX/0877